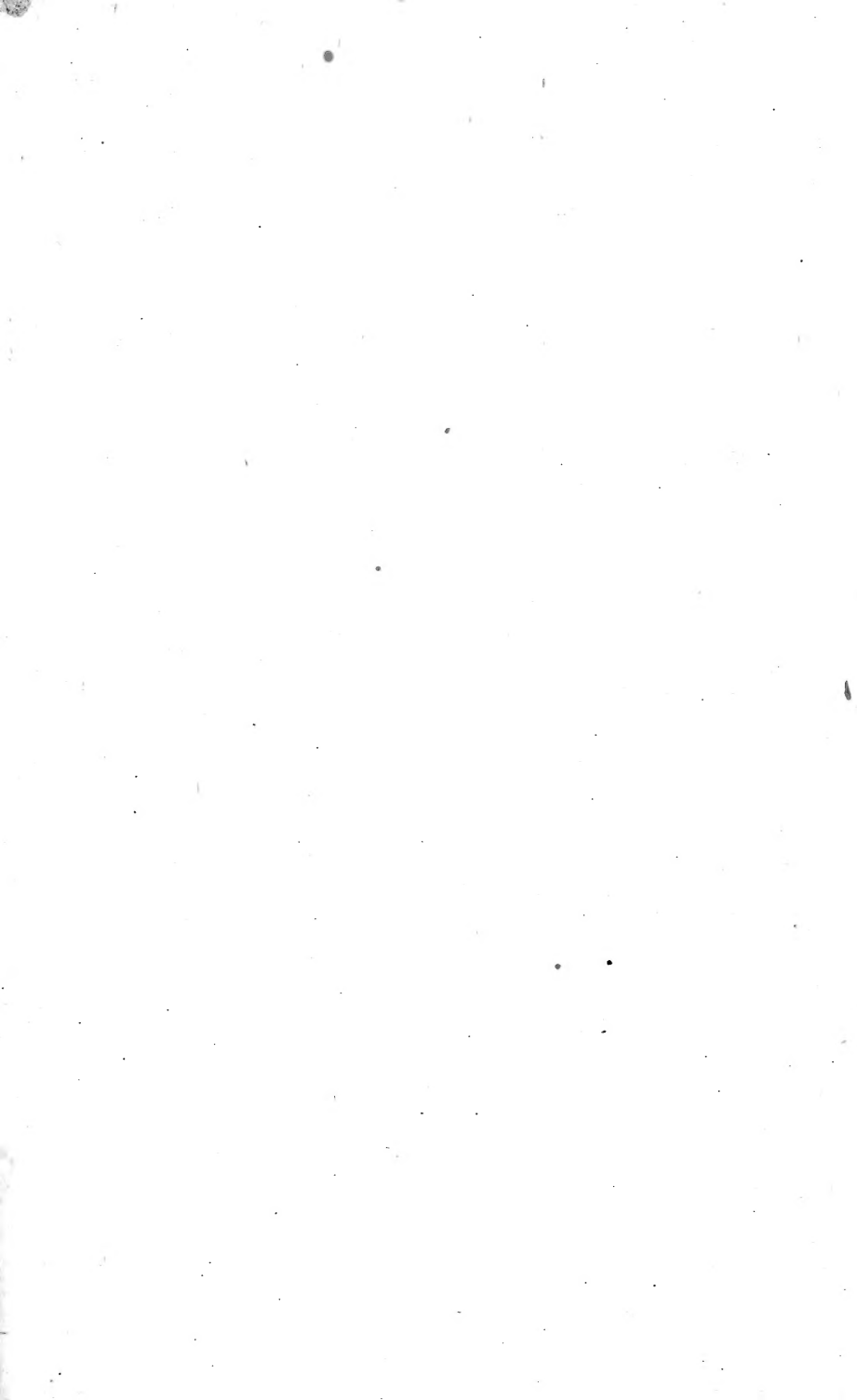


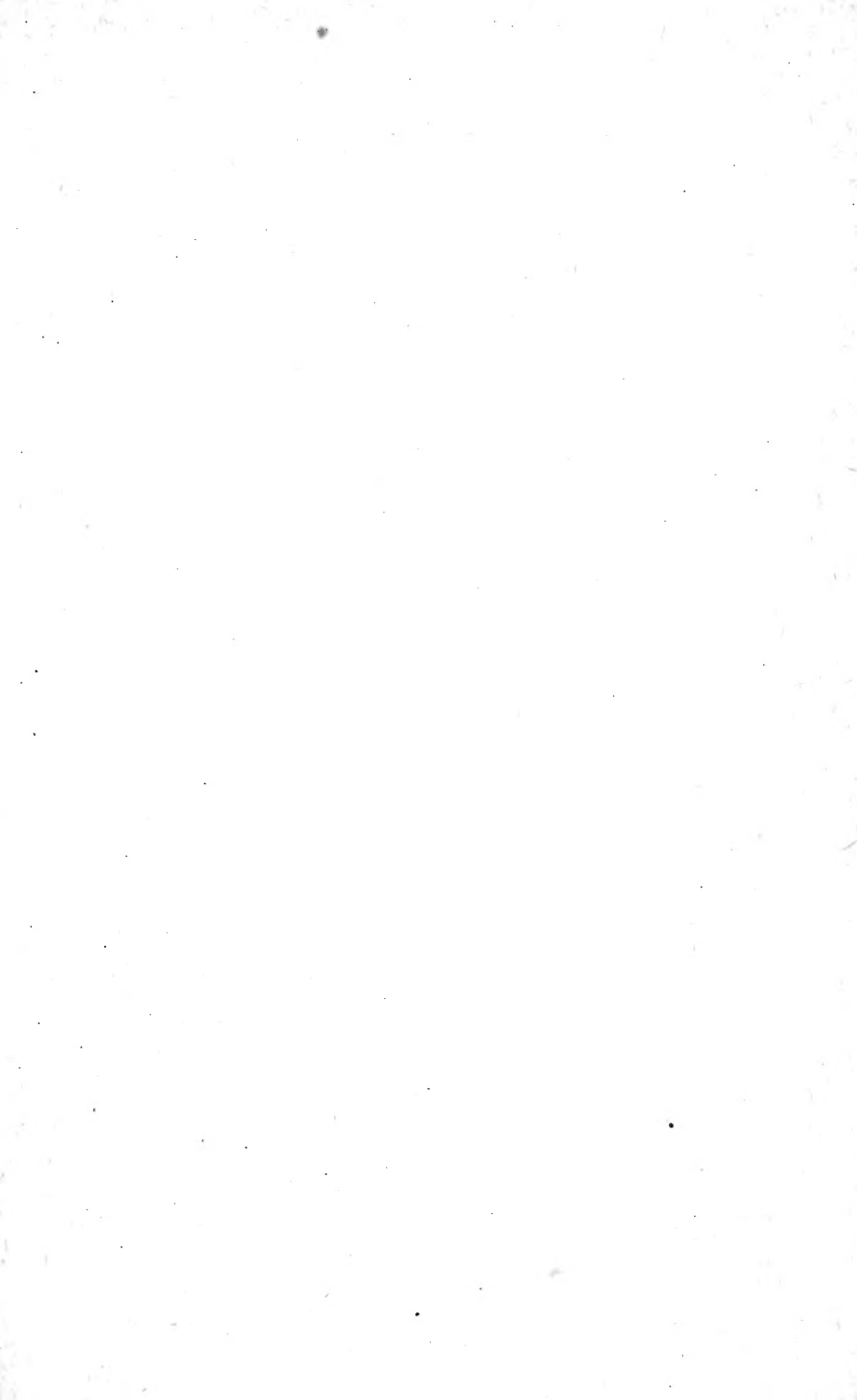


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HISTORY

OF THE

MINNESOTA HORTICULTURAL SOCIETY,

FROM THE

FIRST MEETING HELD AT ROCHESTER IN 1866,

TO THE

LAST AT SAINT PAUL IN 1873.

COMPRISING



DEBATES, ADDRESSES, ESSAYS, AND REPORTS.

PUBLISHED BY THE SOCIETY IN COMPLIANCE WITH AN ACT OF THE LEGISLATURE.

PASSED AT THE SESSION OF 1873.

SAINT PAUL :
OFFICE OF THE ST. PAUL PRESS COMPANY.
1873.

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1873

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In concluding their labors, the committee in charge of the work would not fail to call the attention of all interested in fruit growing in Minnesota to the significant fact that the results of the past severe winter throughout a wide extent of territory in the West, show, that in Illinois, in Indiana and Missouri, in localities far to the southward of this State fruit trees suffered far more heavily from frost than with us. Whilst, indeed, we have had many losses to chronicle, the statement comes to us that in Missouri apple trees of the largest size were killed to the ground; so that the trials of the past "exceptional season" were not without some reassuring features, when we compare our losses with those of fruit growers hitherto considered more favorably situated. Aware of this, the committee could not pass it by; and would therefore in all earnestness urge new efforts to achieve the great ends sought, assured as they may well hope and believe of a good result.

AN ACT

TO PROVIDE FOR THE PRINTING AND PUBLISHING OF THE TRANSACTIONS OF THE MINNESOTA HORTICULTURAL SOCIETY AND THE DISTRIBUTION THEREOF.

Be it enacted by the Legislature of the State of Minnesota :

SECTION ONE.

The object of the Minnesota State Horticultural Society, an incorporation duly incorporated under the general laws of this State, being to improve the condition of horticulture, rural adornment and landscape gardening, it shall be allowed for these purposes to take, hold and convey real and personal property; the former not exceeding in value five thousand dollars.

SECTION TWO.

There shall be printed two thousand copies of the reports of the State Horticultural Society, from the organization of the society until A. D. one thousand eight hundred and seventy-three, including its transactions at its annual meeting held on the fourteenth day of January A. D. one thousand eight hundred and seventy-three, provided, the number of printed pages of said volume shall not exceed two hundred; the Secretary of State shall distribute the same as follows, to-wit: two hundred copies in making the customary exchanges and in supplying one copy to every public library and to the editor of every periodical in this State, two copies to each member of the Legislature and the officers thereof; and to each of the State officers; one hundred copies to the State Horticultural Society; fifty copies to the State Agricultural Society; fifty copies to each County Horticultural Society who shall report its organization, with officers elect, and number of its members with an abstract of its proceedings for publication in said volume, to the State Horticultural Society; fifteen copies to each County Agricultural Society who shall report annually to the Secretary of the State Agricultural Society as provided by statute; and all the remaining copies to the State Horticultural Society.

SECTION THREE.

Hereafter, or until the Legislature shall otherwise order, the report of the State Horticultural Society together with the abstract of the reports of other Horticultural Associations of this State, so far as the same shall be published, shall be annually printed, published and distributed, in like manner and number as provided in section two of this act. Provided, that such

expense of publication shall not exceed in any one year five hundred dollars.

SECTION FOUR.

This act shall be in force from and after its passage.

Approved February 27th, 1873.

STATE OF MINNESOTA, }
OFFICE OF THE SECRETARY OF STATE. }

I hereby certify that the foregoing has been compared with the original on file in this office, and is a true copy thereof.

Witness my hand, and the Great Seal of the State, this 14th day of March,
A. D. 1873.

[SEAL.]

S. P. JENNISON,
Secretary of State.

INCORPORATION OF THE SOCIETY.

ARTICLES OF INCORPORATION OF THE MINNESOTA STATE HORTICULTURAL SOCIETY.

Know all men by these presents, that we, the undersigned, John S. Harris, of La Crescent, Houston county, John H. Stevens, of Hennepin county, Wyman Elliot, Charles Hoag, J. T. Grimes, A. Stewart, R. J. Mendenhall, Peter M. Gideon, and Charles H. Clark, all of Hennepin county, D. A. J. Baker, Truman M. Smith, D. A. Robertson, William E. Brimhall, H. J. Brainard, L. M. Ford and Wm. Paist, all of Ramsey county, and Thomas Ramsden of Washington county, O. F. Brand, A. W. McKinstry and Levi Nutting, all of Rice county, and P. A. Jewell, of Wabasha, E. H. S. Dart, of Owatonna, Steele county, all of the State of Minnesota, do hereby associate ourselves together, for the purpose of becoming incorporated under the name, and for the purposes hereinafter stated, pursuant to the provisions of title and chapter 34 of the General Statutes of said State of Minnesota so far as the same may be applicable—and do now adopt the following Articles :

ARTICLE 1. This corporation shall be known as the Minnesota State Horticultural Society.

ARTICLE 2. The object of the society shall be to collect, condense and collate information relative to all varieties of fruits, flowers, and other horticultural productions, and dispense the same among the people.

ARTICLE 3. Any person interested may become a member of the society by paying to the Treasurer or Secretary, the annual fee of one dollar, and signing the constitution and by-laws.

ARTICLE 4. The amount of capital stock of this corporation shall be twenty-five thousand dollars (\$25,000) with privilege to increase it to \$100,000, to be held in shares of twenty-five dollars each.

ARTICLE 5. The officers of this Society shall be as follows : President, one Vice President to reside in each Congressional District of this State, Secretary, Treasurer, and an Executive Committee of three or more members, all of whom shall be elected at the annual meetings of the society, which shall be held on the 3d Tuesday in January.

ARTICLE 6. The principal place of business shall be wherever the majority of the society may hereinafter designate.



THE

HISTORY OF HORTICULTURE

IN

MINNESOTA.

The history of horticulture in Minnesota, of the attempts, the many failures, and finally, the successes of the pioneers in this undertaking, so vital to the prosperity of the State, and the welfare of the people, is one of the most interesting of the kind on record; because, in contrast to the labors of fruit growers in lower latitudes, the lines of experiment have been almost infinite in variety, and uncertain in first results. As a matter of course, therefore, these efforts have been confined to comparatively few persons in a case seemingly so difficult to achieve success.

But whilst the climate and soil have demanded constant experiments looking to new and hardy varieties of fruits, varieties to be had only by patient trials of numerous kinds, the history from year to year of this important enterprise, shows that the State has, from the first, been favored with the presence of a few determined and enterprising men who have never wearied in their noble and self-imposed task; but who keeping the great and important end in view, could not consent to think of failure as possible, meeting annually, and oftener, to compare notes and to aid each other with their several experiences, the result is at last the announcement of a list of fruits, perhaps as long as is desirable under the circumstances, reasonably certain in production, and of excellence unsurpassed.

No one can go over the debates held at the meetings of these pioneers in fruit culture from year to year, and not be struck with the constantly recurring announcements in their earlier history of losses in trees; oftentimes on the most extensive scale too; losses borne apparently of course, and with a philosophy commendable in the highest degree. Sometimes seeing their trees suffer because of too tender varieties; sometimes from blight; killed one year at the root, the next perhaps, at the top; sometimes because of a too late ascertained wrong exposure or situation, and so on, and yet all this we repeat, borne with a patience wonderful to note now. The result has been that out of all these losses, these mistakes and disappointments, and numberless experiments, that at last a degree of certainty in fruit culture has

been attained, such as must finally place these men on record as benefactors of the State, and the State itself in the front rank as one of the fruit growing States of the great Northwest.

In all this, we must remember that the climate, especially, has never lacked disparagement; never lacked those, both at home and abroad, always ready to put its friends and advocates on the defensive if possible. And too ready as our people are in many cases to accept the defensive, it has been one of the chief difficulties against which horticulturalists here have long labored, in vindicating their calling and position as residents of this portion of the Northwest. Even after they have presented the noblest fruits of their labors at horticultural fairs, and after the cavillers have been brought face to face with these splendid trophies won by the hardest, even that has hardly sufficed, when repeated from year to year, to redeem the results from being classed as "exceptional;" as the result of chances such as cannot happen again.

Fortunately, the time has arrived when the horticultural society and its many friends and supporters, need only in a limited degree of labor to vindicate their position, since their successes, in ample scope, speak for themselves. When individuals of their number can point, annually, to hundreds of bushels of choice apples, the product of single orchards in the State; and when the finest varieties of grapes grown anywhere, are raised here by the ton, the chief thing at last left to do, is to make known to the whole State these splendid results, whilst at the same time, still further prosecuting lines of experiment, so as to give still greater varieties and still more certain results. When our own people are constrained to see, and the people of other States to confess from undoubted evidence, how unmistakable is our success, we may, as one of the valuable results, reckon upon a degree of enterprise and emulation here, which in the abundance of fruit raised will leave us nothing to desire. Serving, as this would do, to keep the money at home, now expended in such large amount for fruit imported from abroad, we might well thereupon congratulate ourselves upon the greater comfort and wealth to accumulate as a consequence; whilst the facts in the case once fairly understood, our population would receive still greater accessions from abroad.

Let it be noted, further, and preliminary to a careful survey of the proceedings at large of the horticultural society, in these pages, that a long period of experiences has shown conclusively, that however gradually, yet none the less surely the leading fruit growers of the State have been approximating firmer ground, in establishing their success upon a sure basis. From the first exhibition of fruits at Fort Snelling, at the Fair of 1860, when premiums were awarded for a few crab apples, and for grapes and strawberries principally, and from the next regular display publicly of apples from grafted fruit, by that veteran pioneer in fruit culture, John S. Harris, of La Crescent, at Rochester, in 1866, when he produced no less than nineteen varieties—a most creditable display at that time,—down to the recent meeting at St. Paul, when a variety so rich and attractive covered the tables as really seemed to leave nothing to desire, the advance, all must acknowledge, has been unparalleled.

But before we take up the regular history of the organized efforts through a horticultural association to advance fruit culture in the State, it is fitting that we should have a glance, if possible, at what was done by single-handed and isolated efforts in that direction.

Amongst the very first then, in the field, in the effort to raise apples, was Mr. John Shaw, from Maine, the splendor of whose success as now seen in the fine orchard of Mrs. Campbell, near Winona, which last season produced six hundred bushels of fine fruit, is perhaps the most marked result had in apple culture in the State, the seed having been planted in 1852.

We find, next, through L. M. Ford's *Farmer & Gardner*, that the Hon. Eli Robinson, of Nininger, had as early as 1860, "a few apples growing on his trees;" and was quite confident of raising this and other fruit at his place. Further, "a friend of his in Washington county, had quite a number of fine apples on trees that had passed through the hard winter;" these remarks indicating plainly enough by the air of doubt conveyed, the then estimated precariousness of the undertaking. At the same time, we note that Mr. P. M. Nichols, of St. Paul had in his garden a large specimen of the Siberian Crab, and some half dozen of the common red and yellow varieties, one tree having produced two and a half bushels of fine apples, that sold at the door, at fifty cents per peck," Mrs. N. gave away a great quantity of the fruit besides—ten times as much as was sold."

At the State Fair held at Fort Snelling, that year, we find that Mr. H. F. Masterson, of St. Paul, took the first prize for "the best display of pears," and Mr. Nichols the first prize for the best display of Siberian Crabs. Messrs. Rudolph Knapheide and Masterson also took the first prize, each, for Isabella and Catawba grapes respectively. Strawberries, especially, made a principal figure at Fort Snelling, on this occasion. The same year—1860—in July, the St Paul Horticultural Society had a fine showing of fruits, flowers and vegetables, the only apples visible on the occasion however being the Siberian Crabs.

In 1861, besides having some success with pears, Messrs. Masterson and Simons raised peaches successfully, the last being reported in the *Farmer & Gardner*, as having one peach tree loaded with fruit, and presenting a "rare and magnificent spectacle." Messrs. Griggs of Kaposia, Dr. L. H. Garrard of Frontenac, and Henry Orstine each raised quite a number of apples, the first mentioned having planted his trees five years previously. The same year also, Mr. Theodore Furber of Cottage Grove, raised apples from trees grown on his place, his father Major Furber, having brought the seeds from Maine, fifteen years previously, and raised several crops from them. Others had made efforts on a greater or larger scale, to establish not only apple orchards, but had tried, as had Mr. Peter M. Gideon, as will be seen by his account of it in the proper place, to grow pears, cherries, peaches, quinces, grapes, the mulberry, &c., determined to be satisfied only by actual experiment, that this region could be suitable only for certain kinds of fruit.

From the beginning of the settlement of Minnesota, indeed, there has not

been wanting on the part of those who remembered with yearning interest the fruits and flowers of their old homes, efforts to reproduce them here, and perhaps there is no more authentic source whence to find evidence of this, than the *Farmer & Gardner*, before alluded to. We find, further then, by reference to its pages, that besides those we have noticed that Truman M. Smith, the present efficient President of the State Horticultural Society, had as early as 1860, an acre of ground devoted to, amongst other things, "grapes," in which of late he has been so remarkably successful, along with "currants, gooseberries, strawberries," &c., there not being weeds enough on the whole place, the editor remarks—"to fill a half-bushel." About the same time, Dr. Ames comes in for earnest laudation for his "fine greenhouse;" and Dr. C. W. Borup, for his extensive "grapery." "Black Hamburg," "Black Prince," "Golden Chasselas," and "White Frontignan," are noted as amongst those under culture. Mr. Ford calls this the Pioneer Grapery of St. Paul, and remarks that on a then recent visit to Chicago, he saw nothing there to compare to it. In the same number of his paper he commends highly the success of Mr. A. D. Foster, of St. Anthony, in raising grapes, his crop summing up "seven hundred and eighty-nine bunches, many of which weighed one pound and a half."

Again at the Horticultural Fair held in St. Paul, on the 4th of July, 1860, Dr. Jarvis is commended for fine varieties of "strawberries;" Mrs. H. L. Moss, for a "tastefully arranged dish of extraordinarily fine raspberries, Brinkle's Orange, Black Caps and Red Antwerps"; Truman M. Smith for "Black Naples and Red Dutch Currants," and others for rich and beautiful collections of rare plants and flowers. Mr. D. C. Greenleaf's taste and energy in flower culture is also noted about the same time with warm commendation on the part of the *Farmer & Gardner*. The same publication for September, 1861, notices "very fine apples growing on trees that have borne for several years," in the grounds of Dr. S. H. Chute of St. Anthony. They are described as "grafted sorts," set out originally by Hon. J. W. North, who had moved to Nevada, and they were "protected on the sunny side, by two boards, the edges of which were nailed together."

For what was doing in fruit culture, about this time, we must continue to draw upon the valuable record already so freely quoted. In September, the same year—1861—the editor paid a visit to various fruit growing establishments around St. Paul, and it thence appears that Messrs. Masterson, Simons, Selby, Bell, Buchanan, Nourse and Marshall, were all doing well in grape culture, the Rebecca, Concord, Catawba, Isabella and Clinton being the kinds cultivated. In a subsequent number of the magazine, the places of Dr. Steele, Genl. Dana, Messrs. Truman M. Smith, Livingston, Bohrer, Martin, Oakes and Barton, are noticed as devoted in some extent to grape culture, the fruit doing well.

As to attempts at raising the larger fruits, and especially apples, the commencement having been made nearly a score of years since, we give the written experience of two gentlemen of this State, amongst the earliest in the field, Messrs. Pond of Bloomington, and Gideon of Excelsior.

[FROM REV. G. H. POND.]

BLOOMINGTON, MINN., May 3, 1873.

Dear Sir:—Your note dated April 23rd, is received.

I do not count myself a fruit grower and have but little to say on the subject, which would be of interest to the public.

After a residence of ten years, during which time I had not seen an apple tree and having occasion to visit my native place, Connecticut, on my return, I brought apple seeds—very few—to plant, I did not expect to see apples from them but did hope to see apple tree leaves—the first season 100 little trees grew from those seeds; the sight paid me for my care. The trees were in a row along south side of a garden fence. The snow drift of winter smothered all but five of them. The five grew rapidly another season but just before winter the pigs rooted up three trees which I did not notice till snow left the next spring. The two remaining trees grew on two or three years when the gophers, I suppose, cut the root of one and it died. The other commenced to bear fruit at the age of 10 years and continued to bear 19 years till last August the wind broke it down at the root. I have five others that I have taken from the root of this tree which have been bearing several years and still others obtained in the same way which are growing. All the apples that I have raised, except some crabs have been produced by these trees though I have at several times during the last fifteen years purchased apple trees. The purchased trees have never amounted to any thing. I think from my limited experience, that if Minnesotians will save the seeds of the apples which they eat, and plant them, and take care of them, in a few years Minnesota will be supplied with good apples enough, with an abundance of bad ones for the pigs. * * * * *

Yours &c.

G. H. POND.

[FROM MR. PETER M. GIDEON.]

You ask me for a brief synopsis of my failures, successes and present prospects in fruit culture. We began our operations 19 years ago by planting 350 apple trees, and about 50 pear, cherry, quince, and English plumbs; and of the lot, one cherry tree and a part of one apple tree remains. And at same time planted one bushel apple seeds, a peck of peach seeds, and a few grape seeds, and have as the result, one apple tree that gave us a few apples the two last seasons, very inferior in quality. Of the first eight or ten thousand trees set in orchard we have not 40 remaining; and of the first twelve years planting of apple seeds, all grown further south, not 30 now remain; but since that time our plantings of apple seeds have been of our own growing from hardy trees, the results quite satisfactory as to stand of trees, but not entirely so in regard to the fruit, that mostly proving crab, whether from crab or apple seeds, but little difference found either in tree or fruit, having grown perfect crab trees from apple seeds, and perfect apple trees from crab seeds, but be the trees what they may in appearance, a crab is the fruit in nearly all instances though some decided improvements on the Hyslop and Transcendent; but still hope for some satisfactory results from our seedlings, of which we have several hundreds set.

We have several seedling trees that give us quite fair fruit, but the only one really fine, worthy of extensive cultivation is the Wealthy obtained from seed sent me from Albert Emerson, Bangor, Maine, some 12 years ago, the parent tree I know not as he gave no name of variety, other than some marked apple and others crab seeds, whether any mixture or not I can't say, but from the one marked crab came the Wealthy apple, a perfect apple in all its parts except its outside lustrous finish, which is crab. Certain from its seeds we grow as many perfect crab as perfect apple trees, none yet in bearing. In size the Wealthy apple is large, form nearly round, color yellow ground, in some samples nearly covered with bright red, a lighter red sometimes extending quite deep into the flesh, which is white, tender, juicy, quite melting and refreshing, core rather small, compact, seeds plump, dark brown, stem medium and hard, season early winter, quality best.

Our present apple prospect is quite flattering, having over 4,000 trees set in orchard consisting of some 200 varieties, mostly promising near equally well with those esteemed our most hardy, though mostly young trees not yet in bearing. We are top grafting the most of our crab trees into large apples, which we find to be splendid stocks, the fruit as large and good as if grown on the apple stock.

Pears bade quite fair with us till the passing winter, which has given rather a damper, having killed or badly damaged every tree; but the winter was an exception, may not occur again in a lifetime, and so shall not give up the pear yet.

Cherries are not a paying crop with us, only helps to fill out the variety. The peach, quince, persimmon and Spanish chestnuts were entire failures. The black mulberry only partially hardy, others all tender. The butternut, black walnut, and sweet chestnut, I think, will succeed. The grape is a decided success, when covered in due season, best covering swamp hay.

All small fruits thrive profusely with us.

We have all exposures and lay of land, found in a timbered region, find but little difference, soil black sandy loam, underlaid with yellow clay, at a depth of from six to thirty inches, and constantly becoming more compact, and the more compact the better for the trees, if set at usual depth. And there is wherein our first losses lay, we did not set deep enough, the roots dried in summer and froze in winter; but of late set deeper, get a good stand and better growth, most varieties doing well. We mulch in fall before the first freezing, any kind of litter will do, old forest leaves best. To save from mice we bait with strychnine by laying a small bit of board on a good sized chip on the ground, then on that lay another, the second perfectly dry, on it put a little dry corn meal over which sprinkle a little fine powdered strychnine, and over all turn a tight box, or instead, we use old sap troughs; and a little corn-fodder on top, will aid to attract to the bait. To powder the strychnine use a square ended stick to crush the crystals while in the vial. Six or eight baits to the acre is sufficient, renewed as often as the meal gets damp.

PETER M. GIDEON,

EXCELSIOR, MINNESOTA, March 30, 1873.

In all the time, from somewhere about 1852 up to 1866, nearly fifteen years, there appears to have been no regularly concerted action between the fruit growers of the State, but each seems to have pursued his own solitary way in seeking to find out the best method to establish fruit culture on a certain basis. The most that was attempted in the way of comparing experiences, and endeavoring to stimulate efforts, appears to have been done by the St. Paul *Farmer and Gardener*, the first number issued in November, 1860, and edited by Messrs. L. M. Ford and Col. John H. Stevens, an occasional paragraph in the other papers of the State briefly chronicling partial successes here and there amongst the line of skirmishers who led the advance in fruit growing.

But, of course, this condition of things could not continue. In establishing State Fairs, the one held at Fort Snelling in 1860, there was a *Class G., Horticultural Department*: the committee appointed to act upon that occasion consisted of Messrs. Alex. Buchanan, R. Chute, Martin McLeod, Mrs. R. Chute, Mrs. A. Buchanan. We have noted already the limited display of fruit on hand, a few pears, crab apples and grapes, being the leading fruits; the exhibit supplemented by preserved fruits, in considerable variety, such as strawberries, currants, gooseberries, huckleberries and wild plums. Of course all this must have looked meagre enough; but, although, as we learn by the "newspaper account" of the Fair, the farmers present met on the second evening in the old chapel and had an animated discussion, we can only learn that the growth of wheat was the principal topic under discussion: and that the conclusion reached was that they could grow twenty-eight bushels to the acre; and that it depended upon them—rightly enough—to lift the State out of its then "financial embarrassments."

By the proceedings of the State Agricultural Society at St. Paul, February 8th, 1862, we find another trace to indicate a growing interest in horticultural matters, Messrs. Wm. R. Smith of Hennipin county, D. C. Greenleaf, of Ramsey county, and Geo. B. Wright of Hennipin, having been appointed a committee

on horticultural matters, with instructions to collect such facts and statistics upon the subject as they were able, and to report them at the next annual meeting. At the next meeting, March 4th, a month later, by a resolution offered by Mr. Smith, the secretary, Mr. J. A. Wheelock was directed to apply to the U. S. Commissioner of Patents for such plants, seeds, and publications as could be apportioned to the State.

Tracing this matter of attention to fruit growing along through the records of the State Agricultural Society, we next see that at a meeting of the executive committee held at the Fair Grounds in Minneapolis, Sept. 30, 1866, present, Messrs. Guiteau, Hoag, Ames and Smith, it was voted, "the first premium for essays on fruits be given to Col. D. A. Robertson, and that it be requested for publication."

We do not learn what particular essay is here referred to amongst the many penned by Col. Robertson about this time in the history of fruit growing, or attempts at it in the State; and, as afterwards the Colonel had the misfortune to lose most of his manuscripts and pamphlets by the burning of his office, there is not much chance of coming definitely at the facts in the case. But, as in March, the same year, previously it will be noted, he had been actively occupied with the fruit question, the substance of his views may be had perhaps in the newspapers of that date, and in what we shall shortly present.

That Col. Robertson deserves all the honor that can be conferred upon him as one of the very first in point of faith and energy in the attempts made to introduce fruit culture into the State, we have the evidence in the shape of two able communications to the St. Paul Pioneer of the dates respectively of March 1st and 14th, 1866, and which are given below. There can be no doubt from what followed in October, the same year, that his special efforts in the line indicated were not only largely influential in bringing about the organization of the "*Fruit Grower's Association*," the basis and beginning of the present State Horticultural Society, but that these efforts,—recognized as we have seen—naturally placed him at the head of the movement as President of the association referred to. As a portion of the history of fruit growing in the State at that time, as well as of the ideas current on the subject, we print the two communications from the pen of Col. Robertson as follows:

[FROM THE ST. PAUL PIONEER, OF MARCH 1st, 1866.]

Pomological—The Pioneer Fruit Growers of Minnesota—What they have Accomplished—How our Fruit Trees are Killed by the Sun—Peach Tree Culture in Dakota County.

[COMMUNICATED BY D. A. ROBERTSON.]

The successes and failures in our pioneer fruit growing, detailed in the letters now in course of publication, are alike instructive and valuable, affording conclusive evidence of the fruit tree growing capabilities of our soil and climate. In the Middle States, as well as in the extreme Northwest, the successful cultivation of fruit trees requires knowledge and experience. There are failures in every climate, resulting from lack of information, from want of care, from sun-blight, or "frost," or uncongeniality of soil, or atmospheric causes. In a new country like ours, a new experience must be acquired.

Of the almost innumerable varieties of standard fruits, we have to discover the kinds adapted to our soil and climate, and there are comparatively only a small number of each sort of fruit adapted to any particular locality. Some varieties, no doubt, succeed best in one part of our State, and others in another. A few varieties, however, appear to flourish in every part of the State, when the conditions necessary to tree-life are observed.

Mr. Rollins, of Wabasha county, one of our successful fruit growers, pronounces several kinds of apple trees worthless, which others have found to be hardy and have fruited, among which is the Early Harvest, that has done exceedingly well in many parts of the State. This is true, also, but not so generally, of the Rhode Island Greening.

Mr. Rollins states also that his young trees—seedlings, we suppose—were badly injured in October last, by the frost, which split the bark and discolored the sap of many of them—the first time he has seen apple trees damaged in a similar way. Like effects are produced from the same cause in the Middle States. Young trees are more tender than the old, because they are more succulent, and have not a hard, close, internal structure, and a rough bark to protect them from the effects of alternating temperatures. To assume that young seedlings, because grown in our soil, are necessarily hardy here, is erroneous. As a general rule, our young seedlings will require greater care than the older nursery trees, of the hardy varieties, brought from more southern latitudes.

And now, what is the effect of frost on our fruit trees? This is our Minnesota stumbling block in the enterprise of fruit culture. Mr. Bell, of Dakota county, expresses the general opinion, that it is frost which kills our fruit trees, and deters so many from any attempt to raise tree-fruit, except the Siberian Crab. If it is the cold or frost that kills our fruit trees, we may as well abandon their cultivation in the open air, for we cannot hope to raise an apple tree to bearing maturity, without exposing it, one or more times, to 40 degrees below zero—to a sufficient degree of cold to freeze quicksilver.

Now, we maintain, and believe the assertion to be capable of demonstration, that it is not the frosts, but the rays of the sun, that do the mischief. This generally occurs when the sap of the tree has been frozen, after it has begun to circulate in early spring. We explain it thus:—The tree is built up of cells of various forms and uses, the different systems of which are closely compacted, forming continuous masses of pith, wood and bark. Part of these cells contain juices, or sap of different kinds; part contain air, which produces chemical effects upon the sap of the tree, analogous to air in the lungs upon the blood of animals. The tree, like the animal, has its organs for inhaling and exhaling air, which are necessary to its life. These organs are called cells or ducts. Any cause which bursts them will produce hemorrhage, for the sap will then run into them as blood into the lungs. There is then disorganization, which, if extensive, kills the tree. If we examine the bark of one of our trees thus injured, we will find that this disorganization pervades that part of the stem or trunk, on the side and spot most exposed to the mid-day or two o'clock sun of Spring. The process of freezing converts water into crystals, increasing its bulk with a powerfully expansive force. In our city, we have seen the iron gas pipes burst from this cause. But air is condensed by frost. As the cells of the tree containing sap enlarge in the process of freezing, those containing air contract in an inverse ratio, so that the bulk of the structure remains about the same. The freezing is gradual and therefore does not burst the sap cells, which have the necessary degree of elasticity to admit of gradual expansion. If the air and sap expanded alike in freezing, the death of all the trees in our forests would be inevitable. They would be split to pieces with terrible explosions. When the tree in which the full current of circulating sap has been frozen, is fully exposed to the direct rays of the sun, the air cells on the side exposed to the sun are rapidly expanded before the frozen sap begins to melt. This expansion bursts the air cells in the part of the stem thus exposed, an effect which could not take place, if the frozen sap were melted and thereby condensed, as rapidly as the heated air in the air cells expanded. By thawing gradually, which must be without exposure to the direct rays of the sun, the heating and consequent expansion of the air, and the melting and accompanying contraction of the previously frozen sap, maintain the necessary degree of equilibrium. The tree then passes through the process of freezing and thawing without the slightest injury. We therefore deduce the proposition, that our trees are not killed by frost, but by heat from the sun. And this is the case in all the Middle States, as well as Minnesota.

It may be asked why our native forest trees are not killed in like manner when thawed by the sun. We know that they are not. They must, therefore, have an organization which secures an equilibrium of forces in the expansion of the air and the condensation of the sap in their cells, independent of the external influences which affect our imported exotic trees. There are a few varieties of fruit trees, natives of the extreme north, no more liable to injury

from the sun, than our forest trees, but of the fact that our best varieties of fruit trees are killed by the sun, as explained, there cannot be a reasonable doubt.

Fortunately there are easily applied preventives of this common cause of fruit tree death.

This partial analysis explains conditions known to many, as necessary to successful fruit culture, among which conditions are the following: Northern slopes for orchards, or in other aspects, low headings of trees, or wrapping their trunks; or with our friend of Dakota county, planting them among brush*—all of which are in fact only devices to avoid sudden thawing. A cloudy, mild day after a frosty night, is well known to cause a gradual thaw, and to avert the destructive effects of a sudden thaw. The bloom of trees exposed to the morning sun is often blasted, after a frosty night, while those not so exposed escape uninjured. Some orchardists plant their trees so as to make them lean with the top toward the mid-day sun or Spring, thus avoiding the direct glare of the sun on the trunk. The branches then, as in low heading, shade the trunk of the tree. To save our trees after they have been frozen we have only to use means like those we employ to save our noses and fingers, to thaw them gradually. To be able to do this with the least trouble, we must plant our trees in situations, and with such protections that their stems or trunks will, when frozen, thaw gradually. A wrapping of newspapers sufficiently answers the purpose. Our correspondent Mr. Berry and some others had trees last Spring in bloom, but the blossoms were blighted after frosts. Their trees are at the foot of bluffs, or in hollows. Such situations are unfavorable. The cold, frosty night air always sinks into hollows, while the warmer air remains on the adjacent elevations, which are therefore the best for fruit trees, especially the slopes not exposed to the early morning sun. Trees planted in the low grounds, exposed to the morning sun, are, according to the principles already explained, in the most unfavorable situation that could be selected.

Fruit trees adapted to our climate finish their growth and harden their wood, and their flow of sap approaches the minimum, before autumnal frosts. This we regard as an unerring test of adaptation. Varieties which do not so ripen, but continue to grow until the season of alternating freezing and thawing, are sure to be killed in whole or in part. The immature ends of the branches will always be killed. These are what are called the tender varieties. They are Fall killed by successive thawings after freezings. Such trees do not suit our climate, unless by pinching off the ends of the branches we can stop their growth early in Autumn and compel their wood to harden. We have no thaws in Winter to kill trees. Our tree killing from this cause—thawing after freezing—is confined to Fall and Spring.

Mr. Bell, of Dakota, has a peach orchard three years old, and "intends" to supply the St. Paul market with its delicious fruit. We wish him success. We see no reason to doubt the success of peach culture in our State, if cultivators will only take the pains to protect their trees. We regard Mr. Bell's method as excellent. H. F. Masterson, Esq., one of the earliest of our pioneer fruit growers, has settled the peach question. He has raised on the bluffs of Summit Avenue as fine peaches as can be grown in New Jersey. The trees were trained near the ground, and covered during the frost months with straw; no more trouble than covering strawberry plants. For the past two Winters he has been engaged away from home, most of the time as attorney for one of our railroad companies, which caused his trees to be neglected and uncovered. They were consequently greatly injured. In all the Middle States the peach crop is very uncertain, but protection here or there would probably make it certain and annual. One moderate crop here would much more than pay all outlay for an orchard, including protection and every other expense.

DODGE COUNTY.

MANTORVILLE, Dodge Co., Oct., 29, 1865.

D. A. Robertson, Esq.:

In answer to some of your questions, I will begin by giving a description of my garden. It was grubby hazel brush land, black soil, with clay subsoil, and partially protected from west and northwest and south winds. Garden plowed in the Spring of 1858, when I procured twelve apple trees and one pear from the Rochester, N. Y., Nurseries, spaded the ground up, set them out then, barely leaved out once and died. In 1860 I bought one dozen more, raised from grafts six miles north of this place, and set them in about the same place I set the first ones. The ground had been spaded and garden vegetables raised each year, and was also manured. When I brought my trees home and set them out they were all killed, or nearly so. They sprouted out at the bottom. The next year the man of whom I

[Note by Colonel Robertson]. * The best shelter trees for orchards are evergreens, which may be interspersed with the front trees advantageously.

bought them said he had two kinds that had never killed. He brought me down six of them. They were the Red Astrachan and Talman Sweet. I pulled up the poorest of previous year's stock and put these in place of those that had died. These have lived, although they were not well cultivated; the limbs were left until very large, and then cut off very badly. I had [of the previous planting] but one No. 1 tree that was a Talman Sweet. It has never killed any. Another, a Red Astrachan, has done very well, being protected by my house from the northwest and north winds. Some of the branches of the others killed partially. Two of the second crop of trees that sprouted from the roots are quite large trees. One from its appearance is a seedling. I put some well rotted manure about the roots every Fall, till last Fall, say ten inches high about the body. The trees are headed low.

In 1864 I bought twenty trees, twelve from J. R. Rollins' Nursery, Elgin, Wabasha county, raised by himself in good shape. In 1863 he had three bushels of apples off of his trees, the oldest six years old from graft. These trees are headed very low. The trees I had of him are three Red Astrachans, one Byham Sweet, one Ramsdell Red, two Sops [wine ?], three Oscaloosa, one Porter, and one name lost. My trees were not mulched. The first three came out all right; Byham Sweet, top partially killed, also Ramsdell Red and Porter. The balance came through all right. The eight other trees were from a Wisconsin Nursery. Four Perry Russets came out all right; three Keswick Codlin, ends of limbs killed some; one Early Harvest, poor tree, and died pretty much last Fall. I have this year set some fifty more fruit trees of different varieties, which we consider hardy here. The above trees described are all standard trees. My garden has been worked every year since 1858. C. R. Hoag, of this town, has experimented with trees more than any man in town, and has now quite a little nursery, and has raised a few apples.

Yours truly,

SAMUEL WILLSON.

WABASHA COUNTY.

ELGIN, Wabashaw Co., Feb. 12, 1866.

Mr. D. A. Robertson, St. Paul.

DEAR SIR: Your communication is received. I will proceed to answer the questions in the circular, in regard to apples, and apple trees.

1. and 2. The oldest trees I have, were grown from seed planted here in the spring of 1856, were grafted in the spring of 1858, planted in orchard in the spring of 1859.

3. The nearest to perfection of any tree I have tested is one, the name of which I cannot ascertain. I received the scions from Vermont under the name of *Spice Sweet*, but upon fruiting, it proves to be a *sour* apple. This, as far as the tree is concerned, I put first and foremost of over fifty varieties tried. I will send by mail a specimen of the fruit; it has been in eating the three past months. The green apple is of this variety. We call it Good Enough; if the true name can be told, would be pleased to know it. The Good Enough is a fine growing tree, with open and round head, has fruited three years in succession. The fruit is excellent for cooking, is good as soon as grown, and none have rotted up to the present time.

With my present knowledge, I would place the Elgin, the Malinda, and the Jewett's Red as the next in point of hardiness, though I have but a single tree of each variety that is in bearing. The Elgin is a Minnesota seedling, is a vigorous grower, open head, and comes nearer to some of the varieties of Crab trees, in appearance, than any other of my trees. It is a fall variety, yellow-shaded, medium size, sub-acid.

The Malinda is a Vermont seedling, very hardy. Fruit not first quality. Good and constant bearer. The yellow specimen sent is of this variety.

Jewett's Red is an eastern variety, red, first-rate. You probably know it.

Red Astrachan, Oscaloosa, William's Favorite, Byham Sweet, Pound Sweet, Sapsanar Shropskin. These would follow as the next hardiest, and they have all fruited with me, except the Oscaloosa.

4th. The soil varies in different parts of the orchard. It includes black prairie surface, two feet deep, and opening, or light colored surface. The subsoil is light colored, very fine sand and clay. The roots of trees readily penetrate the subsoil.

5th. My first trees were planted on the previous year's breaking; have planted since on older ground; do not consider previous cultivation as essential, if rotted well when broke. It has been cultivated in corn, leaving the stalks to stand through the winter, but not planting within four to eight feet of the trees. One year in rutabagas. Think corn is best. Have manured once with barnyard manure.

6th. The surface is uneven; has a southern aspect though portions slope in every direction.

I consider the lowest hollows, with black soil the poorest, the highest portions, being unprotected, the next poorest, and the slopes the best. Sheltered on the north by higher ground, and some parts are sheltered on the east and south by higher ground and grubs, or small trees. On the west there is a hedge of willows and cottonwoods, now 15 or 20 feet high.

7th. Have banked up the trees in the fall to the height of one foot, more or less, for the purpose of keeping the water and mice from them.

8th. My trees are headed low, some of them very low.

9th. In addition to those noted, I have fruited several kinds, a part of them seedlings—15 or 16 in all.

10th. A part of the trees were mulched the first season after planting; not since.

Varieties that have failed or done but poorly—Baldwin, R. L. Greening, Roxbury Russett, Golden Sweet, Hubbardston Nonesuch, Spitzenberg, Early Harvest, Porter, Gilliflower.

The above I consider worthless here. I have several varieties of apples not in general cultivation; some of them promise well; some have fruited here.

My young trees were badly damaged last October by the frost. We had warm weather until late in the fall, and the cold weather of the latter part of October found them still green, and some were apparently growing. The frost split the barks of some, and discolored the sap or soft wood of others. It is the first time I have seen the apple damaged in a similar way.

My location is prairie principally, though the portion occupied by my orchard is bur oak opening with hazelbrush. There are no large trees on either side. As far as my observation goes, high or elevated timber land, with the timber left on all sides sufficient to break the winds, would be the best location for fruit trees, always regarding the slopes as preferable.

My trees have all been raised from seed sown here, and grafted by myself.

The earliest fruit from the seed was produced on trees four years from the seed, they having been root grafted when one year old.

In this section of the State, George Sylvester, of Plainview, Wabasha county, and Nathan Fisher, of Beaver, Winona county, have raised apples.

Yours respectfully,

IRVIN W. ROLLINS.

WASHINGTON COUNTY.

AFTON, Feb. 20, 1866.

Col. Robertson:

SIR: In answer to your inquiries regarding apple trees, I beg to say, that on the 9th day of May, 1854, I set out twenty-five three year old trees.

2. Came, I understood, from Iowa.

3. None have escaped injury.

4. Surface soil, rich, black loam, with clay subsoil.

5. The land was under cultivation one year before planting. I have grown pumpkins among the trees.

6. Southern aspect, sheltered on the northwest side by bluff's.

7. I have sometimes protected the trunks with cornstalks—sometimes with boards.

8. They are grown tall, mostly.

9. The Fameuse, Dominie, and Strawberry varieties have fruited.

10. I have mulched sometimes in winter.

I have one Fameuse, which the deer girdled and killed; it has since grown up from the roots, and borne fruit of good size and quality for several years. Last spring it was covered with bloom, which, I supposed, the frost killed, as it all fell off.

Another Fameuse bore a bushel of fruit in 1862 and died the year following. I had five trees labeled, "York Russet," which died immediately; two Dominies, one of which bore a little fruit, both died out; three Vandaveeres which made a great growth, killed out but have since grown up from the roots; three Baldwins, gone root and branch; three Sweet Boughs killed, but grown from the roots; two Swaars gone; two Esopus Spitzenbergs of which one is alive and has bloomed, but never bore fruit. I had two Strawberries, one bore a few apples, but killed down to the ground—it has grown up from the roots, and last year the suckers bloomed again. Should the season prove favorable, I expect several of the above to bear next summer. I shall set out a few Duchess of Oldenburg trees in the Spring. Wishing you success in your efforts,

I am truly yours,

DAVID BERRY.

DAKOTA COUNTY.

MARSHAN, Dakota Co., Feb. 13 1866.

Mr. Robertson:

DEAR SIR: I received your letter yesterday requesting me to give you my experience in fruit-growing. I am happy to do so. I emigrated from the southeast part of Vermont to Michigan in 1835. I lived there nineteen years, and raised a good orchard. The spring frosts there frequently killed the fruit on some of the trees, and not on others. Some varieties would stand, being loaded with snow and ice, and still produced good crops of fruit. I did not then know that frost would kill the trees. I came here in the Spring of '54, and the following spring procured sprouts from the roots of my old orchard, and a lot of the same kind of trees grafted the year before. I set them all out on the open prairie; let them remain two years. The sprouts killed down each winter. I then transplanted them in ground where they were partially sheltered, and put them to the severest test to see if I could freeze them, but found them to be proof against the cold of winter and heat of summer. I then bought thirty kinds, raised here, but not one of them was perfect proof against the winter.

I have sixty trees in all, which will probably bear during the coming season. Of these kinds, one will now and then freeze to death, but never has a bud failed, in one of the varieties. When I cut any of the limbs from this variety, the cut soon heals over, becoming green and smooth and healthy. The trees of this kind head [branch?] out about five or six feet from the ground, forming a handsome top. The fruit is of medium size, very fair and handsome. For cooking, first quality; ripens in September; fruits young, and a great bearer.

I got this variety from the White Pigeon Nursery, Michigan, but have lost the name. I will send you some of the fruit next fall, and one of the trees next spring. It is of my own grafting. I wish you to plant it on the coldest spot you can find, but give it good care the first summer to insure a healthy growth, and then freeze it to death if you can.

In my opinion, the cause of failures is more in fault of the people than the climate. They think that if they buy trees and set them out, they are not required to do anything more. But like the garden, they need attention to make them grow and produce crops. If they are so treated that they have just the breath of life in them in the fall, they are sure to freeze to death before the next season. Most people have no faith in raising orchards in Minnesota, but I have no doubt of success, although the quinces, pears and cherries I planted have all died. I have had peach trees growing for the last three years, and intend to have peaches of my own raising for sale in the St. Paul market. My peach trees are planted in rows sixteen feet apart. I have set two rows of posts eight feet from the trees; the posts are eighteen feet long, both rows of posts standing inwards [towards the trees.] Before winter I nail a board from the top of one post to the top of the other and then nail on slats, leaving space between. In the spring I take off the straw from the top and south side, cover the roots before winter, well with straw to keep the ground from freezing too much. This is the greatest success in keeping all kinds of fruit trees from freezing in winter. All I know about raising fruit has been learned by accident.

I grabbed an acre and a half of brush land on which I set out my apple trees. I found that the row which I set close to the brush did best of any. I then set a row in the thick brush, and found they did best of all summer and winter. I let the brush grow as thick as possible, but not to overtop the fruit trees. I spaded the ground a few feet around such tree. Brush land is moist and mellow. Apple trees do not need a very hot sun, neither must we let grass grow amongst them, nor weeds, or grain. Corn may be grown a few years, but not near the trees. * * *

Yours truly,
JOSEPH BELL.

[FROM THE ST. PAUL PIONEER, MARCH 14TH, 1866.]

Pomological—The Pioneer Fruit Growers of Minnesota—What they have accomplished.

[COMMUNICATED BY D. A. ROBERTSON.]

Our original proposition that apples and other standard fruits can be grown in Minnesota with success and profit, and that our extreme cold is not the cause of failures in their cultivation, has been, we think, satisfactorily demonstrated already. There has, however, prevailed among our people so much doubt, unbelief and ignorance on this subject, that

much reiteration, superabundant proof, and precept upon precept, seem to be necessary to inspire confidence, and to incite among them a general spirit of enterprise and emulation, in the cultivation of improved fruits.

The evidence we publish to-day ought to suffice without additional facts to convince the most skeptical. Examples are cited of great success, in various parts of the State. The cultivators have raised severally from 25 to 30, 40, or 50 and 75 bushels of apples in one year, in young orchards, some of the varieties of which are considered tender four or five degrees south of St. Paul. These are not fictions, or theories, but facts.

In the subjoined letters there are several suggestions of great value to our amateur fruit growers. We would call particular attention to the method adopted by Mr. Faribault to check the growing of his trees, and force them to ripen their wood and thus prepare for winter. This plan will not only arrest the growth of the trees in early autumn, but also protect the roots from alternate thawing and freezing, a common cause of tree death, in early spring. The blossoms on some of the trees of Mr. Faribault, and of many others, were killed by the late May frost, last year which it will be remembered was very severe. The well informed will not be discouraged by such an occurrence as untimely frost, to which Minnesota is not more subject than the Middle States. Trees in blossom in the vicinity of large bodies of water, as at Marine, and in situations not exposed to the early morning sun escaped injury. Cold water thrown upon the blossoms of exposed trees before sunrise, would no doubt have saved many of those that were blasted by that severe frost, and insured a crop of fruit.

Mr. Odell, an intelligent gentleman of Hennepin county, thinks it is the severe cold that kills fruit trees. The reader is referred to his letter. We have not space at present to review his suggestions. We can refer him in these letters and otherwise, to hundreds of trees planted since 1855, which have enjoyed the advantage of shelter and protection, that are now thrifty and healthy. Shelter, artificial or natural, from our fierce winter and spring winds, is undoubtedly necessary. The colder the wind, the dryer it is.* A fruit tree, especially when young, exposed to the full force of our violent winter and spring winds, is in danger of being suddenly deprived of its moisture, dried up, racked, injured, perhaps killed. Hence the necessity of shelter from wind.

DAKOTA COUNTY.

CASTLE ROCK, Dakota Co., Minn., Feb. 12th, 1866.

Col. D. A. Robertson :

Dear Sir: I reply to your circular as follows :

1. I have fifteen apple trees, which have been planted six years.
2. Obtained them from a pedler.
3. Name of varieties unknown; they are grafted.
4. Surface soil, black muck loam, subsoil, clay.
5. The land had been cultivated one year before planting; since then cultivated as a garden.
6. It is sheltered by trees on three sides, north, south and west.
7. Have not protected the trunks of the trees.
8. Trees medium height.
9. Several have fruited.

The name of one variety that has fruited is Maiden's Blush. The names of the others are unknown. Eight varieties fruited last year. Some of them have been bearing four years.

10. Have mulched them two seasons. I think mulching important in dry seasons.

I have also 80 trees which have been planted two years, obtained from Rochester, New York, the names of which were lost. They are doing finely. I have not lost one since they were planted. Of these 40 are standards, and 40 are dwarfs.

I have a few Siberian Crab trees, which do extremely well, bearing the fourth year from the seed. I have two varieties red and yellow.

Yours,

J. B. STEVENS.

WASECA COUNTY.

OAKAMAN, March 2d, 1866.

Col. D. A. Robertson :

Dear Sir :

* * * * *

I have about one hundred seedling apple trees, about fifty of which have borne some during

[Note by Col. Robertson.] * Dry, sweeping, cold winds will kill unsheltered trees in our lowest temperatures.

the past five years. They were planted eight years ago last Spring; obtained from Wisconsin. My surface soil is black, subsoil yellow loam, with a mixture of clay.

The land had been cultivated one year before planting the trees, and for five years after mostly in garden crops; the past two years to grass.

The present appearance of the trees is good. Some were killed four years ago this winter. The trees are pretty well sheltered on both sides.

I mulched my trees one winter. Some of them are high and seem low; limbs come out rather low generally.

The fruit has generally been fair and good, for seedlings. Two years last fall I had about 25 bushels, the two past seasons about 5 bushels each year. * *

Yours truly,

WM. G. ALLYN.

WABASHA COUNTY.

WOODLAND, March 5th, 1866.

Mr. D. A. Robertson:

SIR:—In this section of the State there are several orchards in bearing. The largest is that of Mr. Stewart (post office address Rolling Stone.) He told me in the Fall of 1864 that he had about seventy-five bushels of apples. Last Fall there were but few apples raised here as the fruit buds were killed by the late frost last Spring. Mr. George Sylvester has an orchard of some one hundred trees in bearing for some three years. Mr. Fisher has an orchard of about the same number of trees, that has been in bearing some three years (post office address Woodland.) My own experience is somewhat limited, but such as it is, I will freely communicate. In the Spring of 1862 I set twenty-five trees from a nursery at Burlington, Iowa. Since 1862 I have planted trees from a nursery at Winona, which are very thrifty and doing well. I have not lost one by winter, but some of them did not grow well the first season in consequence of the severe drouth. I mulched them. The varieties are the Northern Spy, Yellow Bellflower, Janetting, Red Astrachan, Golden Russett and Winter Greening, all of which are doing well. I have ordered for setting next spring, the Duchess of Oldenburg, Saps of Wine and Wine Saps, with some of the kinds that are living of the planting of 1862, which are Yellow Bellflower, Janetting and Golden Russett.

W. GOLDEN.

WASHINGTON COUNTY.

MARINE MILLS, Feb. 26, 1866.

* * * * *

The orchard I am to speak of belongs to Mr. Cheeney, not a resident of the State at present.

The trees were grown from seed, and planted in the spring of 1850; seed obtained from Vermont and Michigan. Do not know all the varieties [grafted on the seedlings?] Among them are Roman Stem, Pearmain, Fameuse, Rhode Island Greening, Golden Sweeting, and Newton Pippin. Very few of the above named varieties have been lost or injured. The trees were planted in rows about eight feet apart, with currants and other shrubs planted in the rows for a protection to the sprouts. The land was cultivated but little after the second or third year. The soil is sandy loam with slight subsoil of clay and gravel. There is solid rock at the depth of six feet. Since the fourth year nothing but grass has been allowed to grow among the trees, except gooseberries, currants and raspberries. The trees look thrifty and bear well, are sheltered on the west side by a bluff, on the north by woods, being on the north side of the St. Croix River and on a narrow table land twenty or thirty feet above high water.

The trees have no artificial protection from either sun or wind, except for the first three years from the shrubbery planted among them.

The trees have not grown very tall, though some of them have reached to twenty or twenty-five feet; they mostly branch low. All the varieties above named have fruited. Some others have not fruited, but have grown well and give promise of fruiting soon. Some few of the trees have been bearing for eight years, others not so long. I believe there were twenty-two fruited last season, yielding nearly thirty bushels of good apples. They are mostly grafted, though some few are the natural fruit. The trees have not been mulched that I remember, since the second year.

The above, as far as my knowledge extends, is the history of the orchard, though additional facts may be obtained by writing to Mr. Cheeney.

S. E. TALLMAN.

RICE COUNTY.

FARIBAULT, Minn., March 2, 1866.

D. A. Robertson, Esq.:

SIR—In reply to your enquiries regarding my experience with fruit trees in Minnesota, I have the honor to submit the following:

In 1859 I planted fifty apple trees, four years old, obtained from Rochester, New York. The names of the varieties I have forgotten; they have all died but fifteen trees, which are in good condition at present, and which have borne from two to six bushels each, of good, large delicious apples for the last three years.

In 1861 I planted 200, three years old, obtained from Ogden, Rock County, Wisconsin; had eight varieties of equal numbers, the names of all of which I have forgotten. Twenty out of this number died the second year. The balance (180) of this lot looks healthy; they all blossomed last season, but the blossoms got killed by the frost, without any seeming injury to the trees. Some of the trees bore a little fruit.

In 1863 I planted 100 more, obtained from the same Wisconsin nursery, three years old. Ten died, and ninety lives in good condition, but have not yet fruited. I have now 285 trees, all of which I am in hopes will bear this year.

My orchard soil is a clay soil with about four inches of dark loam on the surface—has been under cultivation four years with corn and potatoes alternately, before planting any of my trees—and every year since with potatoes, manured with an abundance of stable manure—always keeping at a respectful distance from the roots of the trees.

My orchard is situated on very high ground, about 300 feet above the bed of Straight River, which runs underneath. The surface of the ground is level—sheltered on the south, east and north, by heavy timber.

I have never protected the trunk or stems of the trees from sun, only when the tree was disposed to grow too rapidly or to continue growing too late in the season. In such cases, I have in the month of September covered the surface with about a foot of earth, some four or five feet circumferencing the tree, to protect the roots from the heat of the sun, but always keeping clear of the trunk, and also taking care to have this earth removed in the spring. This method stops the too rapid growth of the tree and prepares it for cold weather, so that the branches are not winter killed.

My trees are all headed low and branching low. I regret that I cannot furnish you with the names of the different varieties which appear most prosperous. To obtain good apples from my own trees being my chief object, I have entirely lost sight of all other particulars.

I have several varieties of dwarf and crab apples—75 trees—all doing well; but as it seems to me that everybody, with a little care, can grow *these* successfully, I will not go into detail. I have also several varieties of grapes, viz.: The Catawba, Hartford Prolific, Concord, Clinton and Isabella, all doing excellent, and in bearing two years. Also the Cherry, Currant, White Grape and Victoria, which are very desirable, and yield abundantly. I have not the least doubt that apple trees will grow and bear successfully in Minnesota; in fact my expectations have been more than fully realized. I am certain that I will not lose any more trees.

In conclusion I would say, let no persons undertake the culture of apple trees in Minnesota, who are not prepared to give careful and continued attention.

I am, very respectfully yours, &c.,

ALEX. FARIBAULT.

HENNEPIN COUNTY.

MINNEAPOLIS, March 5, 1866.

Col. D. A. Robertson:

SIR—I enclose a statement by Edward Murphy, Esq., of this place. His experience in attempting to grow fruit trees was of the most discouraging character, but his soil and location (near the Fair grounds,) were both unfavorable. The soil was light and sandy, in a frosty location. I planted apple seeds in the garden of J. S. Norris, Esq., at Cottage Grove, in the Spring of 1852, but owing to improper preparation of seed, but 60 came up that year, and some 400 came up in 1853, after lying one year in the ground. Of those seedlings, some 20 or 30 are now alive, 5 of which appear to be perfectly sound, healthy, handsomely formed trees; 15 have borne fruit; 1 fruited in 1862. Two of them bear very good fruit.

I think that you are mistaken in thinking that hard freezing will not hurt trees, without warm sunshine. I *know* that the freezing and thawing of March and April will not hurt trees which have been uninjured by the coldest weather in winter. Apple trees have not been killed in the mild winters.

[How do you "know" this, Mr. O? Favor us with facts to support your opinion.—R.]

I know that they have been killed in those winters in which the cold has been most extreme, viz.: 1851-2, 1855-6, 1856-7 and 1860-1. In winters that the lowest temperature has been 46 degrees below zero no apple trees have been unhurt except the Crab, while in those winters in which the lowest temperature was 25 degrees below zero, no apple trees were injured. The sap wood is often killed and the bark left alive. Trees in this condition may bear fruit the ensuing summer. They are liable to have a strip of bark killed on the south side in the spring. They are often killed one, two or three years afterwards by the rotting of the wood extending to the roots.

I approve of all your suggestions in regard to soil, location, mulching, &c., to promote a healthy growth, and to induce the trees to mature the wood before winter. A selection of the hardest varieties, a good location and care will insure success. Stocks for grafting should be grown only from the seeds of hardy trees, because the stock does effect the graft more or less in all respects.

Believing that Minnesota will in a few years produce a plenty of apples for home use,

I am, yours truly,

SIMON H. ODELL.

These communications—let it be noted—were printed in March, 1866; and in the month of October following, the movement was made, the signal step taken, which by united and systematized effort was to bring together all the energy and sagacity of the fruit growers of the State, for the attempted accomplishment of their wishes. A State Fair was held at Rochester that fall, and the story of what happened cannot better be told than by the correspondent of the *Pioneer* in his communications of that date, given below. The exhibition of fruits at the Fair by Mr. Harris, was undoubtedly a great stimulant to what followed in the organization of the "Fruit Growers' Association."

The Minnesota State Fair—Letter from a Special Correspondent.

ROCHESTER, October 4, 1866.

We are highly favored with pleasant weather again to-day and the exhilarating effects of the hygienic atmosphere in the valley of the Zumbro is appreciated by all. * * *

Floral Hall has a great attraction this morning, in the display of Minnesota fruit. J. S. Harris, of La Crescent makes the best display, and exhibits

Fall Pippin.

Jennetan.

Red Streak.

Westfield Seek-no-further.

Western Seek-no-further (different from the Westfield.)

Tallman Sweet, extra hardy for Minnesota.

Jersey Sweet, extra hardy.

Woodstock Pippin.

St. Lawrence.

Newton Pippin.

Northern Spy.

Western Baldwin.

Transcendent Crab.

Hyslop Crab.

Two varieties, name unknown, and four varieties of seedlings.

The Jersey Sweet is the largest and finest fruit on exhibition.

Of grapes we have the Delaware, the Diana, Northern Muscatine, (hardy).

Black Connecticut Seedling (perfectly hardy).

Clinton ——— (hardy).

Isabella, unworthy of cultivation.

Another collection of apples comprise the Ornis, Minnesota Seedling, Mielinda, Good Enough, Rollins of Eyota.

Elgin, a fall variety, and a Minnesota Seedling. Also several lots without name.

FRUIT GROWERS' ASSOCIATION.

An adjourned meeting was held this evening to hear the report of the committee appointed last evening to draft a Constitution.

A good attendance and the committee made their report, which was accepted.

The following is the list of officers for the ensuing year:

Col. D. A. Robertson, President.

Col. Charles Hoag, Vice-President.

Dr. J. H. Stewart, Treasurer.

Pennock Pusey, Corresponding Secretary.

J. H. Brainard, Recording Secretary.

TRUMAN M. SMITH,

WYMAN ELLIOT,

DR. CHUTE,

DR. DAVID DAY,

O. H. KELLEY,

Ex-Committee.

On taking the chair Colonel Robertson made some very interesting remarks upon the certainty of success in fruit culture in this State, and he complimented the gentlemen present for the interest they were manifesting in the good work, believing that the future of this society would show their labors as one of the greatest value to the State. He suggested that next year this society have a display of Minnesota fruit as a commencement.

Mr. Harris of LaCrescent said: that every fruit tree we plant would be a monument to our memories. He came from Ohio where fruit is plenty; he found no fruit here and his first attempts were laughed at by his neighbors, being a lot of trees he purchased at LaCrosse ten years ago that no one else would touch. Some of that fruit was now presented to the gentlemen present. Many were afraid to set out trees but he was satisfied we could raise fruit here. He loses no trees on old cultivated land but does lose some on new ground. Trees should be set on ground where early melting snows will run from the trees and prevent the slush from freezing about the trunk which will be apt to loosen the bark and kill the trees. On two of the trees he first set out he gathered last Saturday three bushels and can sell them to-day for fifteen dollars. Jersey Sweet—the very tips of the trees have never been injured by our winters. The fruit is of extra large size and a handsome apple.

He claims that no crop to shade the trees should be planted in an orchard.

All mulching ought to be removed as early as August, so as to let the ground cool off in the fall. Leaves and chips are the best manures, as they will restore those ingredients to the soil which have been destroyed by the prairie fires.

Four best varieties for Minnesota—Red Astrachan, St. Lawrence, Bailey's Sweet, and Red Streak.

Pears—Flemish Beauty.

Several other gentlemen gave their experience in fruit growing, all considered it a fixed fact in this State.

Several gentlemen were elected Chairmen in their respective counties, to act in connection with the Society, as provided for in the Constitution.

It was the opinion of other gentlemen present, that trees set on fresh broken ground would do just as well as on old ground. O. R. Hoag, of Dodge County, claims that locality has much to do with fruit trees, many doing well with others that have failed with him.

The fruits exhibited to the meeting were thoroughly tested, after which they adjourned.

SECOND LETTER.

ROCHESTER, October 6, 1866.

Besides the above there were a number of specimens, the names and growers of which we did not ascertain.

There were also a good show of grapes, among which the most prominent and most successful varieties—grown in Minnesota—were the Concord, Delaware, Hartford, Prolific, Northern Muscatine, Clinton and Creveling. The fruit growers present at the fair reported numerous successful growers of fruit in various counties of the State, who had not exhibited; and while the fruit show was one of the most interesting and gratifying features of the Fair, many regretted that there was not, as their might have been, a larger display.

We predict that at the next Annual Fair there will be a show of Minnesota grown fruits that will greatly astonish our people. To insure this most desirable object we confidently rely

upon the agency and organized efforts of the Minnesota Fruit Growers' Association, formed during the Fair, and of which Col. Robertson of your county, by the unanimous choice of the fruit growers present, has been elected President. The Col.'s well directed efforts in the cause of fruit culture in this State, made this a deserved compliment. The other gentlemen elected to the various offices of the Association, are also zealous workers in the fruit cause of our State, and I have no doubt that their joint labors will be crowned with abundant success.

The following is the Constitution of this Association as adopted Oct. 4th, 1866:

CONSTITUTION OF THE MINNESOTA FRUIT GROWERS' ASSOCIATION.

ARTICLE 1. The object of the Association shall be to encourage fruit culture in the State of Minnesota : to collect and disseminate correct information in relation thereto, and to promote friendly reunions and community interest, and a spirit of generous emulation among the amateur and professional fruit growers of the State.

ART. 2. There shall be elected annually a President, Vice President, Treasurer, Corresponding Secretary, Recording Secretary, and an Executive Committee of five members, who shall constitute the Executive Department of the Association and the Chairman of Sections shall be ex-officio members of the Executive Department.

ART. 3. The Executive Department shall have power to frame By-Laws for its government and regulations for the meetings and Fruit Shows of the Association.

ART. 4. The Executive Department shall cause Sections to be organized, as far as practicable in every county, city, village and township of the State.

ART. 5. The presiding officers of the Sections may be chosen by the respective members thereof, and the Association, and the Executive Department may appoint chairmen or organize Sections.

ART. 6. All members of the Sections shall be members of the Association, and each member shall pay to the Treasurer one dollar per annum, which will entitle him to all the benefits of the Association.

ART. 7. The presiding officer of said Section shall communicate, from time to time, the results of experiments in fruit culture in his vicinity, to the Executive Department, and all valuable information thus obtained shall be communicated to all members of the Association.

ART. 8. The Executive Department, shall appoint *State Fruit Shows* for each description of Minnesota grown fruit in the respective seasons thereof, distributing the places of such shows to accommodate, as far as practicable, the different regions of the State.

ART. 9. All the dues collected from members shall be expended in disseminating among them information relating to fruit culture.

ART. 10. An annual meeting shall be held on the second day of each annual State Fair, in the vicinity thereof, when there shall be an election of officers for the ensuing year, and in the event of their being no State Fair, in any year, the Executive Department shall appoint the time and place of an annual meeting of the Association for that and other appropriate purposes.

ART. 11. This constitution may be amended by a majority of members in attendance at any annual meeting.

The following is the list of officers for the ensuing year:

Col. D. A. Robertson, President.

Col. Charles Hoag, Vice-President.

Dr. J. H. Stewart, Treasurer.

Pennock Pusey, Corresponding Secretary.

J. H. Brainard, Recording Secretary.

TRUMAN M. SMITH,
WYMAN ELLIOT,
DR. CHUTE,
DR. DAVID DAY,
O. H. KELLEY,
Ex-Committee.

The following are the chairmen of Sections, appointed by the Association, they are all fruit growers:

J. S. Harris, La Crescent, Houston Co.
 Dr. J. D. Ford, Winona, Winona Co.
 Rev. Mr. Evans, Stockton, Winona Co.
 Mr. A. B. Curry, (St. Cloud, Stearns Co.
 H. H. Hurlburt, Minneapolis, Hennepin Co.
 Rev. Chas. B. Sheldon, Excelsior, " "
 J. B. Perkins, Independence, " "
 G. L. Sylvester, Woodland, Wabashaw Co.
 I. W. Rollins, Elgin,
 Benjamin Day, Hastings, Dakota Co.
 Daniel B. Truax, Nininger, " "
 A. A. Hubbard, Medford, Steele Co.
 H. Buell, Caledonia, Houston Co.
 J. D. Swain, Rochester, Olmsted Co.
 Chas. R. Hoag, Mantorville, Dodge Co.
 Gen. A. Chambers, Owatonna, Steele Co.

O. H. K.

Mr. Harris contributes his *recollections* of the memorable occasion in the following:

A SCRAP OF HISTORY.

Thursday morning, Oct. 4th, 1866, Col. D. A. Robertson, of St. Paul, came to me and proposed the organization of a Horticultural Society. After a brief consultation with Wyman Elliot, J. W. Rollins, A. W. Sias, and some others present, a meeting of the fruit growers of the State was called and held the same evening in Rochester. At this meeting the Association was organized by the election of officers and the adoption of a constitution. Col. D. A. Robertson was elected President, Chas. Hoag and John S. Harris, Vice-Presidents, and A. W. Sias, Secretary. There was no great amount of business done, but the time was chiefly occupied by Robertson and Harris in endeavoring to diffuse in the minds of others hopes like those that animated theirs. They were looked upon by many with serious suspicions of their sanity: but their hope and enthusiasm became contagious and has extended to every part of the State, and fruit growing has been successful, even beyond their fondest hopes.

JOHN S. HARRIS.

By further information received from Mr. Harris, it is his impression that the above described meeting was participated in by the lamented Mr. Harkness, being the first step by the latter towards the promotion of a cause which afterwards was destined to be so greatly benefited by his untiring efforts.

Next in evidence of the fact that the organization just noticed had some recognition from the public, and especially from the State Agricultural Society, we find that at the seventh annual meeting of the society held in the House of Representatives at St. Paul the following February, the seventh of this month [year 1867] the following Resolution offered by Mr. Hoag was adopted:

Resolved, That the State Agricultural Society approve the suggestion of Col. D. A. Robertson, President of the State Fruit Growers' Association, that some means should be adopted to be procured for naturalization in Minnesota, apple, pear and cherry trees from Russia and other northern portions of Europe.

We have at last reached that period in the history of attempts at organized effort to call attention to fruit growing in Minnesota and to the adoption of some system in regard to it; when indeed, there is a "Fruit Growers' Association." But it is worth nothing that important as was the origin of this Society to the State, it appears to have sprung into existence only as an

incidental offshoot of that older organization, the State Agricultural Society, at one of its Annual Fairs. We have already given Mr. Harris' account of the matter. By a letter of a recent date—March 21st, 1873,—from Mr. John R. Kepner to Mr. Wyman Elliot, the latter having requested information in regard to this first meeting, we learn that “the Society was organized one rainy night, and, as noted by Mr. Harris, *under the seats of the stand of the race course*, on the grounds of the Agricultural Society; that “on a subsequent evening (the next one, probably,) there was a meeting at the office of Dr. Cross, at which there was a general talk on horticultural topics, when the society adjourned.”

From the fact that a careful search through the Rochester papers of that date gives us nothing beyond the exhibit above made; that no notice can be found of the meeting other than what we have gotten from the St. Paul correspondent, the occasion appears to have made not much impression either upon those who participated in it, or upon the public, even of the town where it occurred; and the conclusion must be admitted therefore, that indeed, it was a mere outgrowth, an impromptu movement, incidental to the greater assemblage which on that occasion monopolized public attention. But none the less important was it as an organization, for all that, as circumstances have since fairly demonstrated; and if its origin was comparatively obscure, and quite unheralded, none who have noted its achievements since, should think it any the less entitled to marked consideration and respect.

In pursuing the history of events with the Association, we come at length to the month of October, 1867, and to events which occurred at the same town of Rochester, in connection with the State Fair of that date. From this print we have well defined accounts of its proceedings as placed upon record, and are at length enabled to learn, definitely, from the comparison of notes betwixt the most experienced and pains-taking fruit growers of the State, what progress was thenceforth made in supplying the State with reliable stocks of apple and other trees. We find that the men who came to the front upon that occasion, were men who enlisted for the war, and who have since, along with others, never let the interest in the good cause abate.

We find then that upon that occasion, (Oct. 4th, 1867) Vice President Chas. Hoag was in the chair, and J. W. Harkness acted as Secretary *pro tem*. Proceeding to the election of officers, the result was as follows:

President, A. W. McKinstry, Faribault.

Vice Prest. Chas. Hoag, Minneapolis.

Secretary, William Wheeler, Faribault.

Cor. Sec., J. W. Harkness, “

Treasurer, John R. Kepner, Little Valley.

EXECUTIVE COMMITTEE.

E. C. Cross, Rochester.

J. W. Rollins, Elgin.

Wyman Elliott, Minneapolis.

J. S. Harris, La Crescent.

R. A. Mott, Faribault.

The proceedings had at this meeting were not lengthy ; but they comprised a couple of resolutions cordially inviting co-operation on the part of persons all over the State, interested in fruit growing ; and a request of Col. Robertson for a "report" with a view to its publication. Debates on various subjects connected with fruit growing occupied the rest of the time.

In regard to the above indicated meeting, the Rochester Post of October 12 has the following notice :—"FRUIT GROWER'S ASSOCIATION. At the annual meeting of the Association held here on the last day of the State Fair, the election of officers for the ensuing year was made. We see among the new officers the following from this county : Treasurer, John R. Kepner, of Little Valley, Olmsted Co ; Chairman of a Section, J. D. Swain, of Rochester ; and on the executive, Dr. E. C. Cross, of Rochester."

MEMBERS OF MINNESOTA HORTICULTURAL SOCIETY FOR 1867.

John S. Harris La Crescent Houston Co.
C. R. Hoag, Kasson.
J. W. Harkness, Faribault, Rice Co.
D. C. Harkness, Redwood Falls.
Nelson Shearman, Rochester, Olmsted Co.
R L. Cotterell, St. Charles.

Mrs. P. A. Jewell, Baraboo, Wisconsin.
Chas. Hoag, Minneapolis, Hennepin Co.
L. W. Rollins, Elgin, Wabasha Co.
A. W. Sias, Rochester, Olmsted Co.
J. Kepner, Little Valley.
J. S. Shearman, Rockford, Ill.

The next meeting of the Association, and an important one as it proved, as the members began to experience the value of united efforts, was held at Faribault, Jan. 30th and 31st, 1868, the convention having been called to order by a gentleman who has ever since proved himself one of the most active and efficient workers in the whole organization, A. W. McKinstry, President of the Society. He opened the convention by an able speech as follows :

Gentlemen : It gives me pleasure to welcome you as members of the Fruit Grower's Convention. Your presence, representing as you do widely separated portions of the State, evinces the general interest which prevails on this subject, and is auspicious for the future of this interest. It could scarcely have been anticipated, however, that our youthful society would be as strong as similar organizations in other States, for it is to be remembered that we have peculiar obstacles to encounter. In other States no question exists as to the feasibility of raising fruit, the main points for consideration being through what selection of varieties and methods of cultivation to secure in this branch of industry, the highest success. Here, on the contrary, we have to encounter at the outset the strongest doubts whether fruit, or apples at least, which constitute the great essential of a fruit country, can be raised at all ; or, at the best, can be produced in sufficient quantity to justify our claim to be a fruit growing State. And this doubt is expressed, not by theorists merely, but in numerous instances by practical men, who have devoted time and means to experiments in this direction. Hence, until this point is definitely settled in the popular mind, it will be in vain to expect a high degree of efficiency and prosperity in the Association. Yet the existence of this doubt renders all the more necessary the existence of a State Fruit Grower's Association, for the bringing together of men engaged in experimenting in this branch of industry from different sections of the State, through whose intercourse, attended with a mutual comparison of experience, which has been

acquired under widely different circumstances of soil and methods of cultivation, we can look for an authoritative solution of this question. If there is any interest in our State which peculiarly requires the advantages arising from mutual co-operation and the most thorough interchange of the results of experience and observation, it is the interest of the nurseryman and fruit grower.

One of the most important of controverted points at the present time, and one which, I trust, may receive some elucidation from your deliberations to-day, is with regard to the feasibility of the attempts to produce hardy and desirable varieties of seedlings. There are some whose unfavorable experience in attempts to raise hardy trees from nursery stock or the seed, have led them to assume that the only prospect of making an apple producing State of Minnesota exists in the project of sending to northern Europe or the Asiatic interior, for selections from the hardy varieties which, it is alleged, are successfully grown there. The fact that the climate of Minnesota is exceptional adds considerable force to this suggestion. We are situated on the most elevated table land of the North American Continent, without the advantage of the proximity of the great bodies of water which temper the air of most of our sister States. The range of the thermometer is great, the extreme variation at one post of observation in the State during the past year having been 139 deg., and the variation between the Winter and Summer mean having been 54 deg. Another peculiarity of our atmosphere arising from the same cause, is its extreme dryness, which experience has shown to be an unfavorable element as respects the growth of fruit. Yet that these facts do not controvert the position that apples can be raised in Minnesota, is demonstrated by the truth that in Central Russia, which presents a parallel in point of climate peculiarities, apples are successfully raised, and of excellent quality. It is probable that they have succeeded there only by reason of a series of trials extending through successive generations, during which out of the hosts of varieties which have proved failures, a few hardy kind have survived. From the experience of some of our nurserymen and amateurs there is reason to infer that success in this direction will reward our efforts here; yet considering the length of time that is required to test not only the thorough hardiness but the quality of the fruit of a seeding apple tree,—time we can ill afford to spare from the brief span of our years—it may well be question whether it would not be expedient, while relaxing no exertion in the raising of seedlings here, to secure from Northern Europe the introduction of the varieties which are the most approved there.

And in this connection, a few words may be appropriate with reference to the value of the fruit raising interest in this State as a matter of political economy. I have not the statistics to show what is the aggregate amount of fruit and nursery products now imported into our State; but a few facts under this head will serve to furnish an approximate idea of the annual drain upon the resources of our State, growing out of our failure to produce fruit.

There were received at the single station of Faribault last fall, 1727 barrels of green apples, and about 400 barrels of dried fruit, the aggregate value of

which would be about \$15,000. Adding to this aggregate the amount received at Dundas and Northfield, and the further amount of the orders filled by nursery agents for trees and stock from abroad, and we shall find the amount annually drawn from Rice County alone, will fall little, if any, short of \$25,000. The statistics of the importations of St. Paul, the past year, show that 20,937 barrels of green, and 3,821 of dried fruits were imported, the aggregate value of which would probably reach \$160,000. From these data we feel justified in assuming that considerable over a quarter of a million of dollars a year are drawn from the resources of our State to supply our people with the essential article of fruit and fruit trees, from which it will be seen that we annually use up no small proportion of the profits of the wheat crop, and that the subject of saving this amount to the pockets of our people, is one which may even well claim the august attention of our State legislative body.

In another aspect, as we believe, our society may well claim for the advancement of its objects, some assistance from the State. The promotion of immigration has been held to be of such importance, as to have justified the appropriation of \$10,000 from the State Treasury the past year, for the purpose of securing a share of the influx from the over-populated countries of Europe. But is it not readily apparent that if the fact can be established and authoritatively proclaimed, that Minnesota is an apple producing State, and that any one of ten or fifteen hardy varieties of fall and winter fruit may be planted with as much certainty of a successful result as in Western New York or Michigan, that we have established an inducement for immigration far surpassing anything the State can offer through immigration agents? And the class which would thus be tempted to take up their homes upon our broad and fertile prairies would comprise the best element of our country, being the intelligent, hardy, and enterprising farmers of moderate means, from the Eastern and Middle States, who are now held back or turned to Missouri or Southern Iowa, by the fear that in coming to Minnesota they must forego the privileges of fruit.

I would suggest that the experience of practical fruit culturists has already been sufficient in the State to warrant the commencement of a list of hardy varieties which shall furnish a basis for additions as future experience shall warrant. Such a list would prove of value to those embarking in the cultivation of fruit, and save them from the waste of time and money into which they might be drawn by unreliable nursery agents.

I need refer but briefly to the question of small fruits, which the point being conceded that they can be raised in abundance, will elicit from our Association only discussion as to the best varieties and methods of cultivation. Yet there is a great deficiency of knowledge on these points, and if this convention can be the means of stimulating the interest of the masses, and turning general attention to the subject, it will confer great and lasting benefits upon the State. To one point under this head, however, it has seemed to me well that the particular attention of the convention should be invoked. I refer to the cultivation of Cranberries. The fact that this fruit is indigenous to our soil, that it is capable of preservation and transportation to a great

distance, that the demand at home is not only large and increasing, but that it also finds a ready sale in the eastern markets, should stimulate us to especial effort to enhance the value of this branch of fruit growing. The cranberry raisers of New Jersey, find the fruit so profitable as to justify the expenditure of from \$500 to \$1000 per acre in the preparation of their grounds for the business. It may well be questioned whether the marshes of Minnesota, with a much less expenditure, may not be rendered equally productive and remunerative. Would it not be well to take measures for the offer of a premium for the promotion of cranberry cultivation in our State. It has seemed advisable to me to extend the sphere of our Society's operations, by rendering it not alone a Fruit Grower's but a Horticultural Society. It is eminently appropriate that the encouragement of the culture of flowers, shrubbery, and the products of the garden, should be combined with that of fruit, and I would suggest whether it would not be advisable to change the original plan of our society by converting it into a Horticultural Association.

Gentleman, I have thus touched upon some of the points which it seems to me may be profitably considered by our convention to-day. I have no doubt that your practical experience will enable you to elaborate and perfect plans looking to the advancement of the fruit growing interest of the State, in a manner much better than I could suggest, and I will therefore trespass upon your patience no longer.

At the conclusion of the President's address, the minutes of the last annual meeting of the Association at Rochester, were read by the Recording Secretary, William Wheeler; and before taking note of what followed in the convention, it may well be remarked that few preliminary addresses upon reasonably untried projects and possible and desirable experiments in any line of effort, have been more wise and suggestive of what in the end proved needful. The programme thus foreshadowed, in regard to the necessity of getting outside hardy varieties of trees; of atmospheric conditions to be met, including dryness, and the estimate put upon the value of the efforts then and since made to make Minnesota a fruit growing State, have all been justified by what has been experienced since; and remarking further, that in this gathering, so far back comparatively, the convention seems to have hit upon varieties of fruit and upon ideas in regard to fruit culture which were so near right that they have not been greatly departed from since, and we may well look upon this particular gathering of the friends of the cause of fruit culture, as amongst the most enlightened and advanced in their ideas of any that have at any time met to discuss the same topics in the State. We shall proceed to show this from the debates which followed.

FURTHER PROCEEDINGS.

On motion of R. A. Mott a committee of three was chosen by the convention, charged with the duty of listening to the discussions, and reporting near the close of the session such resolutions as would seem to embody the views of the convention upon the various questions discussed. The committee

consisted of Messrs. A. A. Hubbard, of Medford, R. A. Mott and Wm. Wheeler, of Faribault.

J. W. Harkness, Corresponding Secretary, read communications which he had received from Messrs. J. R. Kepner, Little Valley; J. S. Harris, La Crescent; Samuel Bates, Stockton; D. A. Robertson, St. Paul, and B. L. Day, Hastings expressing regret that they could not be present, and making valuable suggestions with respect to the fruit-growing interest.

On motion of R. A. Mott, the President was empowered to arrange an order of discussion for the various topics.

J. W. Harkness was elected Secretary, *pro tem*.

On motion of Mr. Hamilton, a committee of three was appointed by the chair, to report a revised constitution at the next meeting. The committee consisted of Messrs. Hamilton, of Winona, Harkness, of Faribault, and Elliot, of Minneapolis.

The President announced the following programme for discussion, with time to be devoted to each proposition: 1st.—The question of receiving aid from the Legislature, and the propriety of sending to Europe for hardy stocks and seeds—30 minutes. 2nd.—The holding of a State Fruit Exhibition—15 minutes. 3d.—Best methods of securing organization of Branch Fruit Associations, and promoting an interest in fruit growing among the people—15 minutes. 4th.—Best varieties of apples—30 minutes. 5th.—Methods of cultivation—30 minutes. 6th.—Grapes—30 minutes.

QUESTIONS DISCUSSED AT LENGTH.

The discussion of the first question was opened by R. A. Mott, Esq. He thought something should be done for the fruit growing interest of the State. He read an extract from Col. Robertson's Address before the Society last year, with reference to the practicability of securing hardy trees from Sweden and Russia. He thought Col. R. was right. The experience of our fruit growers in attempting to make native varieties succeed, had been very unfavorable. Judge Berry estimated that he had spent enough time and money in experimenting in fruit trees to have furnished himself with all the apples his family would need for twenty-five years. He had set out trees and had better experience than the rest, for he had produced one little, hard apple. Gentlemen from Winona, Wabasha and La Crescent had sent specimens of fruit they had raised; but the proximity of their river renders their location more favorable than Faribault. It was to be questioned whether these varieties would succeed in all sections of the State, and under all circumstances. It seemed to Mr. M. that the people of Minnesota feel interest enough in this subject to bear the expense of sending to Europe to import hardy kinds. Our State expended last year \$10,000 to promote immigration; most of which was spent in printing a pamphlet to tell about Minnesota. Now let the State do something for this object. We should send some gentleman competent to decide upon character of soil, similarity of climate, and adaptation of varieties to our soil.

Mr. Hubbard called for the reading of Col. Robertson's Address. It was read by the Secretary.

Mr. Harkness thought it well to look at home for hardy varieties. If he had hopes of Legislative aid, would favor the plan of sending abroad; yet he thought that good varieties of fall and winter apples could be raised here. He had been through different parts of the State, and knew that hundreds of bushels of apples had been raised last year. He thought the object of this society was to encourage raising our native fruits, not discourage it. There are five or six varieties which can be raised in various localities. Some gentlemen had said fruit could not be raised outside the bluff. Fruit is raised in the south part of Goodhue county, in Waseca, in Blue Earth, in Rice and other counties. He would favor asking the Legislature to appropriate several hundred dollars to be expended in premiums for the encouragement of raising seedling varieties. There are seedlings in several parts of the State which are valuable, and would probably be brought into notice by this course.

Mr. A. C. Hamilton, of Winona, said that his experience warrants the belief, that there are kinds in Wisconsin and Minnesota which are hardy. He had seen apples in some soils near the river prove a failure, while others do well on the same farm. It seemed to him that we should give a chance to native varieties. Among those which he considered suited to our climate, he would mention the Duchess of Oldenburg, Fameuse, Red Astrachan, Perry Russet, Tetofsky, and the Crabs, which give a variety of fall and winter fruit. The Fameuse keeps till the middle of January; the Perry Russet till June. With these and the Duchess of Oldenburg for a summer apple, we have a variety which will afford fruit the year round. When we go through the country how few of our farmers do we see who have the small fruits. If the Association would encourage the growth of these, it would accomplish a good deal.

Mr. Dorrance, of East Prairie, Rice Co., said that nine years ago last March, he sent for 900 apple trees. The nurseryman sent him 2,000. He could not give the names, for he was not acquainted with varieties. He had kept cattle, sheep and hogs out of his orchard; had lived in Southern Wisconsin and set out trees three times before he could make them live; he did not consider his selection of fruit good; he had Red and Green Sweetings; could recommend the Green Sweeting as hardy; Pippins are not so. He had one bearing tree which came labelled Seek-no-further; supposed it to be such. Some of his trees bore in three and some in four years. His soil was a sandy clay. He had 64 bearing trees; did not think any tree grower should be discouraged; he had reports in circulation every year, that Dorrance would not raise any more apples, but he knows no good reason for them. He would not trim trees; trimming kills them.

Mr. Hubbard referred to the statement of Mr. Dorrance that he has a clay soil. According to his experience, that was the best soil. But unfortunately for Minnesota we have little of it. He had resided in Wisconsin for many years, and found that the best orchards were on clay soils or heavy soils. He had been back to Wisconsin four times, and had always been astonished to find their soils so poor compared with ours. He should be astonished if he

had not lived there, to find that men could get a living on such poor soils. They raise a number of kinds of apples, but few, comparatively, are perfectly hardy. The Eastern parts of Minnesota are like Wisconsin, and better adapted to raise apple trees than this section. Ninety-nine-one-hundredths here are failing in their efforts to raise apples. Mr. H. spoke of the greater dryness of our climate than in Wisconsin and Iowa. As to varieties, we have had the best success with Duchess of Oldenburg. Had brought a number of varieties from Wisconsin—Fameuse, Red Astrachan, Tallman Sweet, Red Romanite and others, and set them out in Faribault. They killed down; had turned barrels over them, including Fameuse, Tallman Sweet, and Canada Red, and they killed under the barrels. Duchess of Oldenburg was not injured, and Red Astrachan stood next best. He thought it would be money well expended to send abroad. Would not discourage raising seedlings; but he did not expect to live long enough to sell such varieties as Mr. Harkness had spoken of raised on this soil. They might grow on Mr. Dorrance's land. A Mr. Allen in Waseca county is successful in raising seedlings on a stiff clay soil much like Milwaukee brick. Apples might be grown in bluff regions along the Mississippi, but we cannot succeed here, and might as well face the music. If we could have an appropriation of from \$5,000 to \$10,000 to send a man to Europe, every man in the State might soon have an orchard. If we had got to raise seedlings to stock the State, he did not want to eat any apples from them. He had a relative on the railroad half-way between Moscow and St. Petersburg, who writes that there is an abundance of fruit there.

Mr. Stewart thought we could get scions at less expense by sending to the Agricultural Department at Washington. He had tried 150 varieties of native fruit, and could recommend none for general cultivation, except the Duchess, and Siberian and Hyslop Crabs.

Mr. Mott had no confidence in the Agricultural Department.

Mr. Dorrance's orchard was peculiarly situated. It is surrounded North, East and West with trees, with large sloughs in the vicinity, which may have had an influence on his trees. Not every man can get such a farm.

STATE FRUIT EXHIBITION.

The question of holding a State Fruit Exhibition was then taken up and discussed.

Messrs. Mott and Harkness favored the holding of such an exhibition.

Mr. Stewart proposed to appoint a committee, for the purpose of examining fruits which might be sent to them, and reporting.

Mr. Hubbard doubted whether enough interest would be felt to secure an attendance of people at an exhibition of small fruits. If an exhibition was held, it should be at the time of the State Fair.

On motion, a committee consisting of Messrs. Elliot, Hubbard and Stewart was appointed to make arrangements with the Agricultural Committee for holding a Fruit Exhibition in connection with the State Fair.

THE SUBJECT OF FRUIT GROWING—APPLES.

The subject of the best method of interesting the people in Fruit Growing

was taken up. Mr. Hamilton suggested that it would be a good plan to select some one paper to publish articles to be written by members of the Association.

Mr. Stewart suggested that the *Farmer's Union* published at Minneapolis would be a suitable medium, being an Agricultural paper and having a large circulation.

Mr. Mott thought it would be difficult to organize efficient branch Associations. Faribault was a good town, but it was difficult to keep up an organization here; thought the best plan was to invite all persons to join our State Association.

Mr. Harkness concurred in this view.

Mr. Wheeler proposed to instruct the committee on Resolutions to prepare a series of questions bearing upon Fruit Growing to be distributed with a request for information.

APPLES, AND THEIR TREATMENT.

Mr. Hamilton gave his method. He would not set out trees over three years old; would take them up in the Spring, if the nursery was near; if not, in the Fall; he would secure all the root possible. If the ground was not too wet would mulch; would only prune in June, and prune but little then; would mulch his trees sometime in the Winter and leave till Spring. The great cause of the killing of the trees, is that the sap starts too soon; the sap is frozen, and the bark starts off. If mulched the sap is kept back; the principal is the same as in burying grape vines. A great many advocate raising a hoed crop in the orchard. His impressions were not favorable to this. Some of the best orchards in the State were seeded to clover. A good nurseryman never cultivates his trees except to keep the ground clean about them. He would let trees grow up like bushes, and head within a foot of the ground. Those apples [referring to some fine specimens of the Perry Russet and Northern Spy upon the table] were raised by Mr. C. P. Buck, of Winona, than whom no one was more careless as regarded the cultivation of his garden. They hung as full as any trees he had seen in Michigan, and were as thrifty and smooth in their bark.

Mr. Hubbard would take issue as to the cultivation of an orchard. He thought grass poison to an orchard tree. Did not object to mulching, but one could not go far enough; with trees of a moderate age in an orchard the roots interlock, and one would have to mulch the whole orchard. In Fond du Lac county, Wisconsin, his father seeded down his orchard, and the result was that he didn't raise his own apples, when he should have had a hundred bushels to spare. The trees grew lousy; many died, and the others made no growth. Finally ploughed it up and manured it, and now raises fine crops. Trees wont bear pruning as well in the West as in the East. In New York one could cut off limbs as large as his leg with impunity. In Wisconsin, trees are safely trimmed from mid-winter to last of June. Trees should be headed low, so as to shade the ground from the sun. Our soil is black, and consequently too warm. Does not think a tree makes good wood on such a

soil. Our wood grows differently from Western New York. Our oak burns green, but oak there cannot be burned green without other wood to burn with it. In New York, trees don't bear as young, but live longer.

Mr. Hamilton spoke of the plan of the Canadian of digging a large hole and putting a large flat stone at the bottom.

Mr. Harkness believed from one-half to two-thirds of the trees were killed by too much cultivation. Would cultivate no tree later than July. Thought disease often arose from pruning in all seasons of the year.

Adjourned till 7 P. M.

EVENING SESSION.

Convention re-assembled at 7 o'clock. The subject of the morning was resumed.

Mr. Brand considered that the Red Astrachan, Tallman's Sweet, Fameuse, and Duchess of Oldenburg, were the best varieties. Considered Red Astrachan as hardy as the Duchess; perhaps a little hardier in certain situations; in some might not be so hardy. Had planted 1,000 Duchess stocks and they had winter-killed. He regarded Red Astrachan as the hardiest one could cultivate. Would place stones under trees; and the soil, whether wet or dry, should be three feet deep. Advised making deep drains under the roots 3 to 3½ feet deep, and filling in small stones. This serves for drainage.

On motion, the President appointed a committee, consisting of Messrs. Harkness, Elliot, Hamilton and Hubbard, to report a list of varieties of apples, suitable for cultivation in Minnesota.

THE CULTIVATION OF SMALL FRUITS.

On motion of Mr. Mott, the subject of small fruit was then taken up in the following order: First, Cranberries; Second, Raspberries; Third, other small fruits.

Mr. Mott urged the cultivation of the Cranberry in consequence of its certainty, its great productiveness, and adaptation to transportation. He read a report of the cultivation in New Jersey from the Patent Office Report of 1865.

Mr. Elliot read from Fuller's Fruit Cultivator as to the habits of the Cranberry. He thought the report of 1,300 bushels to the acre in the Patent Office Report absurd, as it would make the fruit 1½ inches deep all over the surface. Thought 175 to 200 bushels to the acre would be an average. Ground should be flowed to keep off insects.

Mr. Frink had seen the Cranberry crop gathered in Shieldsville. The marshes had no sand, and the Cranberries did not grow where the ground was not overflowed.

Raspberries.—The cultivation of raspberries was discussed.

Mr. Mott had tried the Doolittle Black Cap, and knew it to be a fine berry. Thinks that in this State we don't need to import varieties. The wild variety

is as good as the Doolittle after two or three years cultivation. They should be planted so as to be partially shaded. After fruiting cut out old canes. Hills should be three feet apart, rows six feet apart; three to five canes to the hill. As the branches reach out, cut off the ends; keep the ground thoroughly forked up. His berries lasted three weeks last year, and no fruit in his garden afforded him so much pleasure. Had cultivated them nine years, and they had constantly grown better.

Mr. Stewart said there were many varieties among the wild as well as the tame Raspberries. Thought if Mr. Mott had a kind as good as the Doolittle Black Cap, he had something quite valuable.

Mr. Mott said the variety he had was not common, and people were accustomed to come to the place where he had procured them for their berries, on account of their being better than the usual wild kind.

Mr. Jackson expressed his preference for Doolittle Black Cap to all others—two to one.

Messrs. Jewell and Stewart spoke well of the Philadelphia Raspberry.

Strawberries.—The question of Strawberries was taken up.

Mr. Frink had set out Hooker's, Hovey's, and Wilson's three years ago. Could not discriminate between them now, but the berries produced on his vines are better than either of the three originals.

A discussion ensued, Messrs. Mott, Hamilton, Jewell and Wood participating, as to the probability of the berries becoming hybridized. The balance of the testimony appeared to be that they would not. Messrs. Elliot and Stewart endorsed the Wilson's Albany as the best market berry for Minnesota.

Currants.—Mr. Hubbard spoke of currants. They are a hardy fruit and too apt to be neglected. Currants should be thinned every year, the new shoots cut away, the old ones left. Would leave one or two new sprouts to a hill. The fruit is much larger when cultivated.

Mr. Stewart planted three feet apart each way; let them stool out and cultivated with a horse plow. As the wood gets old and decayed, cut it out.

Mr. Elliot spoke well of mulching to keep the ground moist during droughts. Thought it a correct practice to thin out, leaving but two or three new shoots, and also cut away a part of old stocks every year. An acre of Currants would produce \$200 to \$250 per year.

Mr. Wood was surprised not to have heard of a different manner of pruning. His practice was to cut the top from every sprout, from two to four inches. Covered the ground with chip manure and always had good crops. Mr. Dawes, from whom he had his system, always trims low, and lets them spread out near the roots.

Mr. Elliot mentioned that the currant worm troubled them some at Minneapolis. He was accustomed to shake them off the bushes on a cloth and kill them.

Plums.—Mr. Hubbard wished to hear about Plums. Inquired concerning Miner's Seedling.

Mr. Jewell said it was extensively planted in Grant county, Wisconsin. Trees grew very large; fruit was not entirely exempt from curculio; thinks

it a wild plum related to the Chickasaw variety. Believes no other variety of cultivated Plum will be able to stand our climate.

Mr. Mott spoke on behalf of our wild Plums. Would not discourage planting cultivated varieties. But by selecting the best wild varieties, might secure an abundance of excellent fruit while experimenting with the others.

Mr. Hamilton recommended the wild Plum for a wind break. Such a hedge was better than willow or evergreens, as it would bear fruit as well as keep off the wind.

Mr. Elliot spoke of a gentlemen near Fort Snelling, who had excellent success in mulching. Our native Plums are very fine. One variety from the grounds of Mr. William M. Harrison, was taken to the St. Louis Fair, and pronounced superior to the Miner Plums. Mr. E. makes a practice of grafting from the finest trees.

Adjourned to Friday morning at 9 o'clock.

SECOND DAY.

Convention was called to order by the President. In the absence of the regular Secretary, H. C. Whitney was elected Secretary *pro tem*.

The minutes of the preceding day were read, corrected and approved.

The Committee on Resolutions reported as follows :

Resolved, That the Corresponding Secretary be instructed to send out a series of questions to the Fruit Growers of the State, for the purpose of eliciting information for the use of the Association, and to present a compiled report of such information, at the next Annual Meeting.

Resolved, That the Legislature be asked to appropriate a sum sufficient to send one or more agents to Europe to procure varieties of fruits adapted to our soil and climate; also to appropriate the sum of \$500 for the purpose of paying premiums on Minnesota grown fruits.

Resolved, That while we would by no means discourage experiments for the introduction and cultivation of all varieties of domestic fruit, we would earnestly urge upon all fruit-growers in the State, the importance of further efforts for the careful testing and improvement of the fruits indigenous to our soil, especially Plums, Cranberries, Raspberries, and Blackberries.

On motion, received and laid on the table, and the committee continued.

Varieties of Fruit.—The committee on the Varieties of Fruit submitted the following Report :

In recommending a list of fruits for general cultivation, your committee find it very difficult to arrange a list of apples that are adapted to all sections of the State. While we would not wish to misguide any in recommending a list of apples that are not all perfectly hardy in all sections, we think that in justice to the more favored localities, we should put on that list a few varieties that are worthy of further trial. There are two varieties that are perfectly hardy, worked on hardy stocks which we would recommend for general cultivation in all soils, viz. : DUCHESS OF OLDENBURG AND TETOFISKY.

We would further recommend for sheltered localities with heavy soils, and

in close proximity to water, the Golden Russet, Tallman Sweet, Fameuse, Red Astrachan, Perry Russet, Hass, Ben Davis and Northern Spy,

All of which is respectfully submitted,

J. W. HARKNESS,

WYMAN ELLIOT,

A. A. HUBBARD,

A. C. HAMILTON.

Mr. Staples, of Wisconsin, had tried growing apples, but had met little success except with the Crabs. The Tetofsky had been the hardiest and most thrifty of his own trees. So far as he knew it had done the best in that place.

Mr. Hubbard objected to the recommendation of the Northern Spy. It was not a first rate, hardy apple, but might be raised in some localities.

Mr. Jewell stated that the Tetofsky is of Russian origin, but not a Crab. One of its peculiarities is its very large leaves. It drops its leaves by the 15th or 20th of October, earlier than any other variety, and matures its wood very early. It is as hardy as the Siberian Crab, and he had no doubt of its entire success in this State. Its roots are peculiar, being long and fibring less than roots of other trees. It makes a moderate growth in the nursery.

Mr. Harkness objected to the Tetofsky on the ground of its not having had a sufficient trial. He had differed with the majority of the committee in assigning it to the position it occupied in their report.

Mr. Hamilton had corresponded with parties in Wisconsin who have had trees bearing for five years. It is not called a Crab. Thought it could be recommended for this State. Localities make a great difference, as Winona and other counties can raise fruit while others cannot.

Mr. Jewell explained the origin of the Tetofsky. It was obtained of a Mr. Gifford near Milwaukee. Mr. Gould gave it the name of a Russian Crab. Mentioned places in Western Wisconsin where it had succeeded well, but thought it had not been thoroughly tested in the worst localities of the State.

The discussion was continued by Messrs. Humphrey, Elliot, Hamilton, Stewart and Mott, most of them being favorable to the endorsement of the Tetofsky.

The Report of the Committee was finally adopted with the exception that the words "in close proximity to any considerable body of water" were inserted, and Northern Spy stricken from the list.

Mr. Mott offered the following resolution, which was adopted :

Resolved, That the Executive Committee be authorized to engage one or more persons to address the Society upon subjects connected with Fruit Growing, at its next annual meeting.

Grapes.—On motion of Mr. Humphrey the subject of Grapes was taken up.

Mr. Stewart recommended Clinton and Concord.

Mr. Humphrey related the experience of a gentleman from Owatonna. His vines had been set three years. He had eight kinds, including Hartford Prolific, Concord, Clinton, Isabella and Delaware. He had concluded it was no use trying to succeed here, except with Clinton and Concord. He pursued the German method of pruning, which was to cut off first year's growth with-

in eight inches of the ground; train to a trellis eight feet high; every year after first, cut back to within two buds of last years cutting.

Mr. Hamilton said that Dr. Ford, of Winona, had the best success with Hartford Prolific, Concord, Clinton and Delaware. The Delaware was the best table grape, and had been grown with best success. Thinks all these vines should be laid low and covered. The Black Cluster Grape is raised in Winona. It is a very hardy grape and never needs covering. Has been exposed to heavy winds, and had the leaves all cut from the vines, but bore grapes. The man who owns the original vine, raises six or eight bushels from his trellis. The grape is as large as the Isabella. It originally came from New York, under the name of Black Cluster, but that is probably not its true name.

Mr. Jewell confirmed the favorable reports of this vine; there was no question of its hardiness in that locality. Thought the success of the Delaware depended largely on the original vigor of the plants. The vitality of many vines were injured by the attempts of nurserymen to propagate too fast. The vines should be propagated by layers rather than eyes of cuttings. A straw covering will answer for Delaware and Concord. Isabella, Iona and Adirondack had not succeeded well as far as known. Rogers' hybrids have done well.

Adjourned to half past 1 o'clock P. M.

AFTERNOON SESSION.

At the afternoon session, the convention was called to order by the President, and Mr. Mott explained the law regulating the measuring of fruit.

Mr. Elliott said custom made law, and it had become customary to use wine measure in selling small fruits. He had noticed that the hucksters were accustomed in buying small fruits to use a round tin measure, of the dry measure standard. If he could sell strawberries by wine instead of dry measure, he could save one quart in six.

Mr. Mott offered the following resolution, which was adopted.

Resolved, That the Legislature be requested to regulate the measurement of small fruits.

It has been deemed best to give the proceedings of this first regular debate on fruit growing that was reported and published, as fully as possible; because—as will be noted—it foreshadowed so much that has occurred since, that it is proof that those concerned as pioneers in fruit growing here, were neither too sanguine on the one hand, or too distrustful on the other. And it demonstrates, further, that in the selection of hardy fruits and plants, they were up, to a remarkable degree then, with the demands of the situation, since on comparing the views advanced by many at the very last meeting at St. Paul—that in January last—the same facts in application to current difficulties and successes could only be reiterated.

For instance, it will be seen that in regard especially to apples, the Duchess

of Oldenburg, Tetofsky, Fameuse, Red Astrichan, Haas, and Perry Russet are yet favorites and have scarcely been improved upon as hardy and desirable fruits; that in regard to grapes the Concord, Delaware, Clinton and Hartford Prolific still find strong advocates. So of other points insisted upon by those who have since had the benefits of experiments reaching to the present time; so that it may well be repeated, and insisted upon, that the debates thus given in full, may well be dated from as a landmark in regard to all that has occurred since.

THE MEETING AT MINNEAPOLIS, 1868.

The next meeting of the "Fruit Growers' Association"—as it continued to be designated—took place at Minneapolis, on Sept. 30th, 1868. The list of members present comprising the following names, recognized at a glance as the staunchest friends of the cause through whatever of discouragement it has passed:

MEMBERS 1868.

Col. D. A. Robertson, St. Paul.	Mrs. C. A. Jewell, Rochester.
L. M. Ford, " "	E. B. Jordon, " "
Wm. L. Ames, " "	A. W. McKinstry, Faribault.
D. A. J. Baker, " "	W. W. Wheeler, " "
Truman M. Smith, " "	J. W. Harkness, " "
W. E. Brimhall, " "	M. S. Abbot, Medford, Steele Co.
Genl. Munch, " "	Geo. C. Chamberlain, Waterford.
W. L. Wilson, " "	H. H. Lowater, Goodhue.
Geo. Scotten, " "	Chas. Snyder, St. Peter.
Thomas T. Smith, " "	S. Bates, Stockton.
J. T. Grimes, Minneapolis.	Ditus Day, Farmington.
J. B. Fleischer, " "	Thos. Moulton, St. Anthony.
Wyman Elliot, " "	A. Stewart, Richfield.
Col. J. H. Stevens, " "	Chas. H. Clark, " "
S. Gates, " "	Amherst Willoughby, Rich Valley.
C. M. Loring, " "	A. C. Hamilton, Winona.
A. W. Latham, " "	J. B. Samis, " "
John S. Harris, La Crescent.	H. Lindsay, " "
Chas. P. Cook, Garden City.	J. S. Shearman, Rockford, Ill.
Peter M. Gideon, Excelsior.	Chas. Andrews, Marengo, " "
P. A. Jewell, Rochester,	S. Hunt, Hudson, Wisconsin.

The President, A. W. McKinstry, of Faribault, upon taking the chair made some very happy remarks congratulating the Association upon its prosperity, and upon the increasing indications of success in Fruit Growing in Minnesota.

Col. D. A. Robertson, of St. Paul, addressed the meeting at some length upon the cultivation of fruits in high latitudes. His remarks were full of interest to the Association, abounding as they did in facts necessary to the successful growing of apples in Minnesota. A copy of the address was requested for publication.

Mr. J. W. Harkness, of Faribault, Corresponding Secretary, made a report embodying the experience of quite a number of successful fruit growers in the State, in reference to varieties, soil, culture and shelter, &c. The principle points brought out in the report were, *First*—Hardy kinds, recom-

mending Duchess of Oldenburg and Haas as hardy. *Second*—Cultivation of ground among trees. *Third*—Preference for clay soil. *Fourth*—Shelter from winds. *Fifth*—Heavy mulching.

On motion of Col. Robertson, the report was received and ordered to be placed on record.

A motion to adopt the report as the sense of the meeting, started quite a discussion, which turned chiefly on the varieties recommended.

Mr. L. M. Ford was not satisfied with the hardiness of the Duchess. He had known it winter killed in several instances.

Col. Robertson thought it perfectly hardy when properly cared for. He thought trees were often lost by improper treatment. He had lost some himself by having them pruned at the wrong season. Trees pruned either in Spring or Autumn were likely to die. He favored Summer pruning, last of June the best time.

Mr. J. S. Shearman thought the Haas perfectly hardy; also the Duchess.

Mr. Peter M. Gideon had found the Duchess stand the Winter, except some trees from which he had cut scions in Autumn. Trees so cut had either winter killed or dropped their fruit next season.

Mr. Cook, of Blue Earth, had never had the Duchess top killed in Winter.

At the adjourned meeting; the next evening October 1st, the discussion of the Corresponding Secretary's Report was resumed, speakers being limited to five minutes, and confined to the topics of soil, cultivation and mulching.

Mr. Ford thought clay soil the best; and favored cultivation and mulching.

Mr. Gideon thought clay and lime in the soil indispensable to the growth of the tree; was in favor of mulching, but did not think cultivation of ground was necessary. He had succeeded best with trees in ground sown to grass. He had trees winter killed in ground cultivated, while those in grass land had stood well, they being heavily mulched all the year.

Mr. J. S. Harris thought clay and lime in soil necessary; also mulching. He cultivates his ground; would not allow weeds or grass to grow in his orchard, as they exhaust the ground.

Mr. Cook said, he has many varieties doing well. His soil is sandy loam on clay subsoil. He cultivates the soil. Has never mulched.

Col. Robertson thought clay and lime in soil necessary. He cultivates the ground for a short distance around each tree, but has never mulched.

Mr. Stewart favored a clay soil, heavy mulching and thorough cultivation. He told of a Mr. Allen, of Waseca, who had a seedling orchard which he had cultivated while the trees were young. They grew finely and looked healthy when they came into bearing. He then seeded his orchard down in grass, and the trees immediately began to fail.

Mr. Gates has some fine Duchess trees in bearing, part of them in cultivated ground, others in clover sod. He don't see any difference in their healthiness.

Mr. Snyder, of St. Peter, said his trees on sandy land had failed, while those on clay had done well. He cultivates his ground in the early part of the season. He does not think mulching does either good or harm.

Mr. Bates, of Stockton, has had good success. He cultivates and mulches.

On motion of Col. Robertson, the following resolution was adopted :

Resolved, That it is the sense of this meeting, that the mulching of trees, and a soil containing an admixture of clay, are necessary to success in growing apple trees.

PROTECTION FROM WIND.

The subject of protection from wind was then made the order of discussion.

Col. Robertson thought protection from winds was necessary.

Mr. Ford thought protection from winds did no good. He had known trees which were protected die, while others not protected lived.

Mr. Elliot thought protection from winds absolutely necessary ; as did also Mr. Andrews, Mr. Shearman, Mr. Stevens and Mr. Snyder.

Mr. Stewart would protect from wind by evergreen hedge, and from sun by having low headed trees.

Mr. Jewell thought protection from wind unnecessary. He had known numerous instances in which trees protected had died, whilst others exposed to the winds had done well. He thought trees should be protected from the sun in Spring.

Mr. Bates considered a good wind-break indispensable to an orchard.

Several resolutions were offered expressive of the sense of the meeting, but none of them seeming to express it very fully, the subject of the Secretary's Report was laid over for discussion at the next meeting.

ELECTION OF OFFICERS.

The following officers were elected for the ensuing year :

President—Chas. Hoag, Minneapolis.

Vice President—J. S. Harris, La Crescent.

Recording Sec'y.—Wm. Wheeler, Faribault.

Corresponding Sec'y.—Truman M. Smith, St. Paul.

Treasurer—Wyman Elliot, Minneapolis.

EXECUTIVE COMMITTEE.

D. A. Robertson, St. Paul.

H. Lowater, Goodhue.

J. W. Harkness, Faribault.

E. H. Kennedy.

S. Bates, Stockton.

On motion of Col. Robertson, the following resolution was adopted :

Resolved, That the Secretary be directed to make a compiled report of the proceedings of the Association, for the past and the present year, and present the same to the Governor of the State.

CHANGE OF NAME.

The constitution of the Association was amended by changing the name to

"MINNESOTA HORTICULTURAL SOCIETY," and providing for a division of the State into districts, each of which should have a Vice President.

Col. Robertson, Chas. Hoag, Wyman Elliot and Truman M. Smith were constituted a Committee of Arrangements for the next meeting of the Society.

The Secretary was ordered to have the proceedings published in the leading papers of the State.

On motion the Society adjourned to meet in St. Paul, in January—the day to be fixed by the Executive Committee.

WM. WHEELER, Secretary.

The following is the Report of J. W. Harkness the Corresponding Secretary, which elicited so earnest a debate, and upon the conclusions of which members were so little able to agree. It will be scanned with deep interest by all who have watched the progress of fruit growing in the State since it was penned some five years since.

REPORT OF COR. SECRETARY HARKNESS.

Read before the Fruit Growers' Association at Minneapolis, Sept. 30, 1868.

At the Fruit Growers' Convention, held at Faribault, Jan. 30th and 31st, 1868, the following resolution was adopted.

Resolved, That the Corresponding Secretary be instructed to send out a series of questions to the various Fruit Growers' of the State, for the purpose of eliciting information for the use of the Association, and to present a compiled report of such information at the next annual meeting.

In accordance with this Resolution, the following questions were prepared and sent out to all fruit growers whose names could be obtained:

First.—What varieties of apples have you planted?

Second.—What is the character of your soil, also subsoil? Specify whether on high land or in a valley; in timber or on prairie.

Third.—In what direction does your orchard ground descend? If sheltered by timber, in what direction?

Fourth.—Is there any large body of water (lake or river) near you.

Fifth.—What preparation do you give the soil, and how deep do you set your trees.

Sixth.—How late in the season do you usually cultivate, and what kinds of crops do you raise among them?

Seventh.—Have you mulched your trees, and at what season of the year, and what with?

Eighth.—Do you ever prune, and at what season of the year?

Ninth.—In what locality or State did your trees originate?

Tenth.—Have you grown any apples? If so, what amount, and of what varieties?

Eleventh.—State your opinion as to varieties and mode of cultivation, with further remarks upon any important points which, in your opinion, are not covered by the above questions.

Twelfth.—If you have fruited any new seedlings, or varieties of grafted fruit, that you cannot name, will you send me a sample of the fruit in season of fruiting, and, if possible, previous to our annual meeting, which occurs on the second day of the State Fair.

* *Thirteenth.*—Have you any superior varieties of natives small fruits, viz: Plums, Cherries, Raspberries, &c., which may seem to you worthy of general introduction. If so please send specimens.

At the Convention it was generally understood, that members should forward the names of such persons as they thought would contribute the desired information. But with a very few exceptions they have not only failed to do so, but have failed themselves to send answers to those questions. Not one-twentieth of the circulars sent out have been answered. I have received a few very good communications; but not one-hundredth part of what the importance of the subject demands, and the comparative success in various portions of the State, would warrant us to expect.

The following summary presents the essential points of the communications received. Other communications than those mentioned were received; but those presented serve to give the experience of the whole.

COMMUNICATIONS.

Wm. L. Lincoln, of Wabasha writes:

I have planted Red Astrachan, Fameuse, Northern Spy, Price's Sweet, and Crabs. I think these and Tallman's Sweet perfectly hardy, and suited to our climate. I have fruited Red Astrachan and Hyslop Crab. My grounds are a quarter of a mile from the Mississippi river, sheltered on the south and west by bluffs. Soil, a sandy loam with clay subsoil well enriched with stable manure. I mulch trees every Fall with coarse manure. Prune in Spring, after trees are in blossom. Have grapes—Hartford Prolific now ripe, August 30th; vines strong and healthy. I cover them in Winter with straw.

R. C. Cady, of Freeborn County:

Has planted Fameuse, Golden Russet, Perry Russet, Saxon, Tallman Sweet, Bailey's Sweet, Red Astrachan, Sweet Pear, Duchess Oldenburg, Price's Sweet, Fall Harvest, Fall Orange, Smoke House, Peach apple, St. Lawrence, Early Harvest and Russian. All these are doing well, and appear healthy and hardy. Has fruited Duchess Oldenburg, Price's Sweet, Munson's Sweet, and the Crabs. Have some seedlings doing well. Early Richmond, May Duke, Early Purple and Common Cherries have done well; also Flenish Beauty Pear.

* *Location:* High prairie—soil, sandy loam, with stiff clay subsoil. Eastern exposure, protected by artificial grove. Cultivate ground in hoed crop. Do not give late cultivation, as it induces too late a growth. Plants trees at same depth as they stood in the nursery. Has had best success with trees when well mulched in November, with manure.

John Dean, of Blue Earth City, has planted Duchess Oldenburg, Perry Russet, Fameuse, Red Astrachan, and Tallman's Sweet. These are well tested and hardy with him. He has other varieties not well tested.

His ground are a high undulating prairie; soil, a sandy loam on clay subsoil, protected by an artificial grove. Gives same cultivation as for corn, ceasing about the middle of July. Late in autumn plows dirt up to trees. Prunes in June.

J. R. Drake, of Northfield, has planted nearly all kinds kept by nurserymen. Finds Red Astrachan, Duchess Oldenburg, Fameuse and Perry Russet quite hardy. Has fruited a number of seedlings, some of them quite promising. Has about a dozen trees in bearing. His ground is high prairie, sandy loam soil on clay subsoil, eastern exposure, enriched with well rotted manure. He considers cultivation necessary to success. Thinks corn a good crop to raise in an orchard. Lost one orchard by seeding down to grass. Mulches with manure. Prunes lightly in June.

Wm. L. Wilson, of Mankato, has succeeded in raising Baldwin, Summer Pearmain, Gilliflower, and several kinds of winter fruit, the names of which are unknown. Thinks he will succeed with many other kinds. His orchard is upon timber land, two hundred feet above the river, inclining to the north and west, and sheltered on the south and east by timber. Soil, a clay loam mixed with gravel, clay subsoil. He thinks such a soil well adapted to fruit growing. He cultivates the ground, growing some hoed crop; prefers Potatoes, Beans, or some low growing crop that will not shade the trees in Summer. He shades his trees in Spring with boards nailed together in shape of V; this protects them from the scorching rays of the sun. Does not think mulching of any use. Prunes early in Spring. Sometimes pinches tips of limbs in fall to make them ripen up well. Has some excellent native Plums; the best he has ever seen anywhere.

Mr. G. W. Sylvester, of Woodland, Wabasha county, has planted many varieties, amongst which are Sops of Wine, Saxon, Tallman Sweet, Perry Russet, Harvest Bough, Kirkbridge White, Red Astrachan, and Duchess Oldenburg. These he considers his hardest kinds. Has raised from five to twenty bushels of apples a year for six years; the principal kinds fruited being those here named. Has grown some seedlings, a few of which have borne. His ground is oak openings—high—with southern exposure, sheltered on the north. Would prefer northern inclination so sheltered. Soil, a black loam on clay subsoil.

Thinks it advisable not to cultivate much or late. Thinks it induces a quick and late growth, leaving the wood not fully ripened, and too full of sap to withstand a severe winter. Recommends mulching freely instead of cultivation. Prunes at all seasons; thinks June the best. Has had trees succeed well on new ground, planted second season after breaking. Plants about six inches deep. Has Flemish Beauty Pears in sod ground doing well.

Mr. Harkness goes on to say:

In examining this correspondence, I have been struck with the great similarity of the experience of those who have succeeded in raising fruit. All have succeeded with about the same varieties—those recommended by your committee in January. All are in favor of cultivation early in the season; in favor of mulching, with one exception; in favor of Summer pruning. High locations with northern exposure seem to have succeeded best. Shelter for trees, has, too, been an important point with all. Trees on clay subsoil seem better than on any other, although there are many localities where trees are doing well on the open prairie, under very unfavorable circumstances.

It is very gratifying to learn that there have been so many varieties fruited here that are known to be tender in Wisconsin, and are seldom raised there except by top-grafting on the Siberian Crab or some other hardy stock.

I cannot close this report, without giving some of my views upon this subject. I think the surest road to success to be that of top-grafting on Crabs. I have the present season seen tender varieties doing remarkably well top-grafted on the Soulard, Siberian and Transcendent Crabs. I have no doubt that by top-grafting, we can raise many varieties here that are now considered tender, and even our hardy kinds, or those that succeed well in favored locations, as the Fameuse, Red Astrachan, Perry Russet, and Golden Russet, will do much better top-grafted on Crabs than they do root-grafted. The Duchess of Oldenburg is about the only tree that is yet known to be perfectly reliable in all localities, root-grafted. The Haas or Maryland Queen seems however to be growing in favor, and in my opinion will be found to be as hardy as the Duchess.

In planting it is very important that the soil should be thoroughly prepared, and thrown up in such a manner that the trees shall stand upon ridges. In cultivation the ground should be left smooth in Autumn, with furrows

between the rows to carry off the water. And it really seems that the orchard is of enough importance to be entitled to the undisputed right of the soil. In such case, all the cultivation necessary is plowing once or twice, in the early part of the season, always throwing the ground towards the trees, but not against them, afterwards harrow smooth. If grass and weeds grow up late in the season mow them down and let them remain on the ground. It is my opinion that more trees are killed by injudicious pruning than by any other one cause. I think June the most favorable time if it must be done.

Too much cannot be said on the importance of good wind-breaks. It is to be hoped that our Legislature will follow the example of those of some of our sister States, and make some law for the encouragement of the cultivation of timber. The day is coming, and not far distant, when to have been five years on a prairie farm without having a belt of timber for shelter will be a reproach to any farmer.

A word here as to the best forest trees to plant and I will close. The Soft Maple and Cottonwood are easily propagated and are good protection. Other kinds might be mentioned; the European Larch and Norway Spruce, the most valuable of all, easily transplanted and rapid growers. One instance (out of many) of which I will make mention of the latter kind, is on the grounds of R. Douglas, of Waukegan, Ill. Thirteen years ago the tree was transplanted, being then one foot in height. I recently measured, and found it to be forty inches in circumference eighteen inches from the ground, and at least thirty feet high.

THE SECOND ANNUAL MEETING AT ST. PAUL, JANUARY 27TH AND 28TH, 1869.

The Society was called to order by the President, Charles Hoag, Esq., of Hennepin.

In the absence of the Secretary, A. W. Latham, of Minneapolis, was elected Secretary *pro tem*.

MEMBERS OF 1869.

Col. D. A. Robertson, St. Paul.	S. Bates, Stockton.
Capt. Peter Berkey, " "	E. B. Jordon, Rochester,
Jacob G. Miller, " "	A. W. Sias, Rochester.
D. A. J. Baker, " "	M. W. Leland, Rochester.
W. E. Brimhall, " "	R. S. Cotterill, Dundas, Olmsted Co.
Thos. T. Smith, " "	Peter M. Gideon, Excelsior.
Truman M. Smith, " "	A. W. Latham, " "
J. T. Grimes, Minneapolis.	J. H. Moody, St. Anthony.
Col. John H. Stevens, Minneapolis.	Thos. Moulton, " "
James Hoffman, " "	R. W. Cummings, " "
Wyman Elliot, " "	A. Stewart, Richfield.
C. M. Loring, " "	N. J. Pratt, " "
John S. Harris, La Crescent.	Wm. Nicol, Jordon, Scott Co.
Chas. P. Cook, Garden City.	E. H. S. Dart, Owatonna.
P. A. Jewell, Lake City.	J. Q. A. Vail, Winona.

J. M. Underwood, Lake City.
 J. W. Harkness, Faribault. Dead.
 H. E. C. Barrett, " "
 O. F. Brand, "
 G. W. Wemple, "
 H. H. Lowater, Red Wing.

Geo. Buck, Winona.
 Lewis Martin, "
 J. S. Shearman, Rockford, Ills.
 J. S. Stickney, Wauwatosa, Wis.
 R. B. Sabin, Sparta, "
 E. Wilcox, Trempeleau, "

A. Stewart, of Hennepin county, moved to appoint a committee of three to arrange subjects for discussion. The motion was carried: A. Stewart, D. A. J. Baker, of St. Paul, and P. A. Jewell, were appointed by the chair.

Truman M. Smith, of St. Paul, moved that the Society sit three times per day, at 10 A.M. and at 2 and 7 P.M., which motion was carried.

A. Stewart, Chairman of Committee on Arrangement of Subjects for Discussion, presented for consideration, morning and afternoon of the first day, apples, and in the evening small fruits. Report adopted.

L. M. Ford, of Groveland, moved to take up first on the list of apples, the Duchess of Oldenburg, and discuss its hardness, which motion was carried.

J. S. Shearman presented his credentials as delegate from the Northern Illinois Horticultural Society, which were read and accepted, and he was cordially invited to take part in the deliberations of the meeting.

A. Stewart thought that the Duchess does well in some localities, especially where the trees stand upon clay soil, and are protected from the wind. Did not consider them hardy on sandy ground.

Truman M. Smith stated that he planted the Duchess in 1861, and they had stood full as well as the Crabs. He did not believe any apples would stand, grown on sandy ground, no more here than in New Jersey. Clay is the soil for fruit.

L. M. Ford was disappointed with the Duchess. He had set several thousand, some brought from Rochester, Minn., and some from Wisconsin, on soil neither sand nor clay. All his larger trees are dead, and some of his younger ones have died where they stood above the snow, at a temperature of only 15 deg. below zero. At the request of Col. D. A. Robertson, of St. Paul, he cited several places where the tree had failed. He insisted that the Transcendent and Hyslop are the apples demanded for the State. The best trees he knew of these kinds are on sand, some of them bearing several bushels. Wm. Harrison, of Minneapolis, sold \$130 worth of this fruit last fall.

Col. D. A. Robertson thought it a great acquisition to find a tree that would live here, and expressed his determination to visit personally every place mentioned by Mr. Ford where the Duchess of Oldenburg is said to have failed. Had found nothing in the course of his investigations to justify Mr. Ford's conclusions. It was a fact that one half the apple trees planted anywhere die; trees die everywhere. The analysis of the common apple tree shows its wood to contain from 45 to 50 per cent. of lime. Sand is silica, of which there is very little in the apple tree. Hence, a soil to grow the common apple well must contain lime; which clay soil does to a large extent. Clay is therefore the soil for an orchard. Believed the Duchess to have succeeded in this State as well as any tree in any part of the United States. Its origin can be traced to Northern Russia, and from thence to Siberia.

J. S. Shearman, of Rockford, Illinois, expressed it as very strange that the Duchess should be injured by 15 deg. below zero on the grounds of Mr. Ford, when 32 deg. below does not effect it in his own latitude. Stated that he had seen the tree growing finely and bearing fruit, at St. Cloud and other places, and had not seen it winter killed. It dies often from careless treatment.

J. T. Grimes, of Hennepin county, had a number of the Duchess on his grounds from one to six years old, none of which had been injured. Made a practice of throwing a low mound of earth round them in the fall to keep off mice, and to prevent the water settling around the roots. Believed many trees were killed because they were not taken care of, often by water settling round the base of the tree, or in its forks, when the bark is injured by freezing and thawing.

P. A. Jewell, being called, stated he believed there are localities where the Duchess failed, and proceeded to cite cases where it had died, and others where it is doing well. Thought that very many trees are sold containing the germ of disease, and many are killed by Winter pruning. He would recommend its cultivation on high land, and near water; but believed it very unlikely to succeed on low rich land, unless near some body of water. Believes there is lime on all Minnesota land, and the tree did not die from its lack. Doubts whether fifty per cent. of this kind of trees is doing well in the southern part of the State. Thought them more likely to succeed if set out at two or three years of age than at one year.

W. L. Wilson, of St. Paul, had two or three Duchess, quite old (the best one set fifty apples last year) on a southern slope, with a grape trellis below, giving partial protection from the sun. Two or three years ago the trees looked perfectly healthy. They now show marks of disease. He did not think they would live, and considered their advanced age no guaranty of their success. States that he has seen very few other trees of this kind.

J. S. Shearman stated that some years ago, after a very dry Summer and Fall, the Winter set in with no rain, and many trees, both old and young, were killed in Wisconsin. Considers pruning in Winter almost sure death to standard trees.

L. M. Ford remarked that many trees killed during our very wet season.

P. A. Jewell stated that trees here top-kill; in Illinois, they root-kill, and that it was his opinion, the trees did not die from either the wetness or dryness of the ground, as there was a coating of snow to protect the roots. Did not think one Crab died to ten Duchess.

D. A. J. Baker, St. Paul, had planted twelve trees of the Duchess, and thought they would not live. Had met with poor success with all kinds of apples, but was not discouraged.

T. Moulton, of St. Anthony, had traveled in Carver, Scott and Stearns counties, but had seen very few that were healthy. Thought many had been injured before leaving the nursery, by being cut back for scions; also, that very many trees have been sold for Duchess that were less hardy varieties.

Chas. H. Clark, Hennepin county, had planted seven hundred apple trees, fifty of them Duchess. Met with perfect success with one and two year old

trees. Those set out older have uniformly failed. His location is elevated and exposed. Soil, black sandy loam with clay subsoil.

A. W. Latham, stated that he had lately visited the grounds of Peter M. Gideon, at Excelsior. He has fine Duchess six and eight years old, doing well and looking perfectly hardy, some of which had borne two bushels the past year. As a proof of his confidence in its hardiness, he had set out the past Spring several hundred trees.

On motion of D. A. J. Baker, the Society adjourned.

AFTERNOON SESSION.

Society convened at the proper hour, the President in the chair.

On motion of Colonel D. A. Robertson, the subject before the meeting was laid on the table, to allow Col. J. H. Stevens, of Minneapolis, to offer resolutions submitted by the Hennepin County Horticultural Society, as follows :

Resolved, That in the opinion of the State Horticultural Society, it is indispensably necessary that the Legislature take immediate measures for the appointment of a State Entomologist.

Resolved, That the President and other officers of the Society memorialize the Legislature on this subject, and take such other measures as may be necessary to accomplish the object.

Col. Stevens supported the resolutions by showing the vast amount of injury annually done by insects in our State, and the benefit which other States have realized by such appointment.

Both the resolutions were unanimously adopted.

Col. D. A. Robertson offered the following resolution :

Resolved, That the officers of this Society be directed to memorialize the State Legislature for an appropriation of \$1000, to be used by the Society in promoting, by premiums and other means, the cultivation of fruit trees, forest trees, and useful and ornamental plants.

Adopted.

TOPICS FOR DISCUSSION.

The Committee on "Topics for Discussion," presented the following topics for the afternoon :

First.—Hardiness of the Tetofsky.

Second.—Adaptability of the Siberian Crab to general cultivation.

Third.—Location of an orchard.

Fourth.—Age of trees to plant.

Fifth.—Cultivation, pruning and protection.

Report adopted.

DISCUSSION OF THE TETOFSKY.

Col. Stevens fruited one apple; bore the second year; thought it might have cost him ten dollars.

T. M. Smith had planted the Tetofsky. It had stood one winter well.

J. S. Shearman—it had not been tried so extensively as other kinds, but so

far, he had not known of its winter killing. It bears its fruit early; at four years is fruiting well, and bears constantly. The fruit is two sizes larger than the Transcendent, and much more like the Duchess in quality.

A. Stewart—have known it to come out good, when the Duchess winter-killed.

L. M. Ford—with him it had succeeded no better than the Duchess. All his trees were dead.

Mr. Grimes planted one tree. It wintered well.

Col. D. A. Robertson—there were few trees of this variety in the State. Had not known of their failing except with Mr. Ford.

T. Moulton, had one tree living out of two, set out two years ago, in sandy soil.

P. A. Jewell, out of many trees, knew of only one case of mortality.

S. Hunt, Hudson, Wisconsin, set a two year old tree in 1866. It had not borne yet, but seems perfectly hardy. Had sixteen grafted trees which had been set out two years, on sandy soil; all doing well. Had lost two trees on the edge of a strip of light sand.

Truman M. Smith moved the following resolution:

Resolved, That this Society recommend the Duchess of Oldenburg for cultivation.

A. W. Latham moved to amend by adding the words "on a clay subsoil."

The amendment was accepted and carried, and the resolution, as amended, was carried with out a dissenting voice.

Col. D. A. Robertson presented the following:

Resolved, That the Tetofsky apple appears to be adapted to the soil and climate of Minnesota, and that this Society recommend this variety for further trial.

Carried.

SIBERIAN CRAB.

T. M. Smith had known them to be injured by blight, but never to winter-kill.

Moved by P. A. Jewell to consider the Transcendent.

Carried.

THE COMMON APPLE.

Col. Robertson—the Common Apple (*Pyrus Malus*) required a soil containing clay or marl. The wood of the Siberian Crab had not, that he knew of, been analyzed; did not know but it might be better adapted to a sandy soil.

A. Stewart had tried Transcendent on all sorts of soils, and had never known them to kill; considered sandy loam with clay subsoil the best ground for them. He had known Siberian seedlings to fruit, and did not consider them necessarily hardy.

P. A. Jewell stated that unless the ground was mulched, sometimes Transcendent, grafted upon tender stock, root-kill; had known them to be injured by blight, but not so much so as other kinds. Had also known them to

be slightly injured by severe cutting. Did not consider their success a question of soil.

L. M. Ford—though other kinds had failed on his grounds, he had never lost a Siberian Crab.

P. A. Jewell said that in Eastern Wisconsin many Crabs had root-killed. To make them certain they should be mulched.

Col. Robertson believed the Transcendent to be as hardy as any tree in the State. Forest trees are mulched by nature, and he was satisfied fruit trees needed mulching as well.

J. S. Shearman had never known the Transcendent to winter-kill, but it is very liable to blight. It is the most rapid growing of apple trees, a gross feeder, adapting itself to any kind of soil, and bearing heavily. It blights at the ends of limbs, when the wood blackens and dies. When dirt is thrown up around the scion, it throws out roots of its own above the stock, in which case the tree never root-kills; otherwise, it is liable to root-kill.

P. A. Jewell did not agree with Mr. Shearman about the blight. Had seen very few Transcendents injured by it. Believe the cause of blighting still in the dark, and thought its rapid growth had no connection with it.

Mr. Stewart expressed the belief that if we could get these Crabs on their own roots, there would be no longer any necessity for mulching, except to guard against drouth.

S. Hunt had never known them to blight except when neglected, or grass grown.

Col. Robertson had heard it stated that the Common Apple would not succeed when grafted on a Crab. He quoted, as the opinion of an experienced horticulturist, that blight is caused by the descent of the roots into soil not adapted to the tree.

P. A. Jewell—these trees blight in June after a growth of one or two feet, and are more likely to blight in a wet season than in a dry.

Col. Robertson offered the following resolution, which was unanimously adopted:

Resolved, That the Society recommend the general cultivation in all kinds of soils of the Siberian Crab, and the propagation of seedlings of the Transcendent for superior varieties.

P. A. Jewell moved to consider the Hyslop Crab.

Carried.

A recess was then moved to discuss a barrel of apples furnished by J. S. Shearman.

No dissenting voices.

AFTER RECESS.

Wyman Elliot presented specimens of Hyslop in good condition. The tree had proved perfectly hardy in sandy soil.

P. A. Jewell did not consider the Hyslop quite as hardy as the Transcendent. He had seen trees injured by cutting. It does not bear quite so heavy

as the Transcendent; keeps well till the first of March, but loses its quality early in the Winter.

J. T. Grimes had several trees in bearing. Did not think them so hardy as the Transcendent nor as good bearers.

P. A. Jewell—the fruit is not larger than the Transcendent.

J. S. Shearman did not think the fruit of the Hyslop could be surpassed for canning. Thought it an invaluable apple to the State. He had never known it to blight.

A. Stewart had grown it for three years, and considered it as hardy as the Transcendent, but more likely to suffer from Winter pruning.

S. Hunt stated that he had often seen it injured by Winter pruning. He thought it should be pruned low.

P. A. Jewell remarked that women prefer this variety for cooking.

Col. Robertson—neither this nor the Transcendent was as good for canning as some smaller varieties, as Golden Beauty, Large Red and Large Yellow.

P. A. Jewell—the Hyslop is coarser and neither as acid nor juicy as the Transcendent.

D. A. J. Baker thought the Transcendent as an eating apple equal to almost any variety, and excellent for cooking. For canning purposes the Yellow Siberian is better.

L. M. Ford thought the Transcendent a better eating apple than the Duchess.

Wyman Elliot quoted the statement of a Kentuckian, who preferred the Hyslop for eating to any apple grown in his own State.

A. Stewart pronounced it good eating.

T. M. Smith offered the following:

Resolved, That we recommend the Hyslop for general cultivation.

Adopted.

Col. Robertson moved that Large Yellow, Large Red and Golden Beauty, be recommended for preserves.

Carried.

Chas. H. Clark, Hennepin county, stated that the Virginia Crab succeeded, while Hewes' Virginian winter-killed. Its apple is the size of the Transcendent, yellow, with a blush. Makes excellent cider.

P. A. Jewell said that Hewes' Virginian was not hardy.

Chas. Hoag had the Crab perfectly hardy.

D. A. J. Baker moved the consideration of the Soulard Crab.

THE SOULARD.

Truman M. Smith reported that with him it had grown well, and had not in the least winter-killed.

J. S. Shearman said that the Soulard is a hybrid between a Common Apple and Native Crab. The tree looked like the Native Crab. The apple is green and quite astringent; keeps till Spring, and is not injured by slight freezing. Can be eaten from the hand no better than the Quince, and substantially takes its place. Where it has been it is considered invaluable for preserves.

Chas. Hoag—had set out a tree which is now ten years old and bears well. The apples are fine for cooking, but not good for hand eating.

P. A. Jewell—the tree is very productive and bears one year later than the Transcendent. It is just as juicy and good the first of May as when gathered.

L. M. Ford had known them to fail under some circumstances.

D. A. J. Baker considered it hardy.

A. C. Hamilton thought that wild apples make better preserves than the Siberian, and believed the Soulard to be equally good.

J. S. Shearman had heard the Soulard recommended as stock to graft upon.

W. E. Brimhall considered it excellent stock to graft on. The fruit makes excellent cider.

C. H. Clark has trees that are perfectly hardy.

Mr. Wyman Elliot moved that the Soulard be recommended for general cultivation.

Carried.

Thanks were tendered Mr. Shearman for his excellent apples, and to Truman M. Smith for the fine specimens of home made wine which the Society had been invited to test.

AFTERNOON SESSION, JANUARY 27.

Meeting called to order by the President.

A. C. Hamilton moved to continue the consideration of topics as arranged for the afternoon discussion. Carried.

LOCATION FOR AN ORCHARD.

J. S. Shearman preferred an elevated, rolling, timber district. Was not clear whether a northern or southern exposure is best. Low, sandy land is not good.

P. A. Jewell—I would choose a high location. A difference of a few feet makes a great difference in the success of an orchard. Thought it a mistake to plant in a position protected from the winds and exposed to the sun, where the trees are injured by the frequent freezing and thawing of the sap. On this account he preferred a northern slope. Other things being favorable, an orchard may succeed on a sandy soil; but declines earlier. No variety can stand and succeed in low bottom land.

Truman M. Smith approved of a northern slope.

A. C. Hamilton agreed substantially with P. A. Jewell. Thought that trees should be planted on prairie land only, after it had been cultivated for a long time; otherwise they would be injured by the alkali left in the soil by Fall burning, which it requires many years of cultivation to exhaust. Preferred a northern slope to a summit.

A. Stewart did not consider so important, near a body of water, to select an elevation.

J. S. Shearman offered the following resolution:

Resolved, That we recommend the planting of orchards on an elevated site, with northern slope and clay sub-soil.

Adopted.

T. M. Smith remarked that nature teaches the preference of a northern slope from the fact that forest trees grow more plentifully there than on a slope to the south.

AGE OF TREES.

T. M. Smith preferred planting one and two year olds.

J. T. Grimes, from one to three years.

P. A. Jewell would plant trees two and three years old.

A. Stewart from one to three years.

A. C. Hamilton, two and three years old.

J. T. Grimes presented the following, which was adopted.

Resolved, That we recommend planting trees from one to three years old.

VARIETIES OF APPLES.

J. S. Shearman stated that he had not known the Haas apple to fail from any cause. It ripens after the Duchess. Had known the Ben Davis to fail in only one instance.

T. M. Smith stated that there is an orchard of Haas within six miles of St. Paul, that had borne over fifty bushels the past year.

P. A. Jewell thought that the Haas had succeeded wherever the Duchess had lived. The fruit keeps till middle of Winter in good condition. Ben Davis had not been sufficiently tried. The Tallman Sweeting is liable to kill in the nursery when young, and should not be set out till three years old. When it has borne a crop it shows a disposition to die; but it may do well.

L. M. Ford knew of only one Haas that is succeeding.

T. M. Smith had gathered a fine crop of Fameuse or Dwarf Trees. The Ben Davis had done well with him through two Winters, but had not yet fruited. The Red Astrachan was not doing so well as the Duchess. Had Large Tallman Sweetings all living; they had not yet fruited.

J. S. Shearman—the Bailey Sweet, Fall Orange, Sweet Pear, and Golden Russet, would do well in certain high localities.

A. C. Hamilton believed that certain varieties were adapted to certain localities. There are many really fine orchards in the southern part of the State, of kinds not generally considered hardy. The Saxton has done well in some places.

P. A. Jewell did not think the Ben Davis had been sufficiently tried to warrant its recommendation.

T. M. Smith—the Westfall Seek-no-further had done well with him. Expressed a wish to try any kinds that had done well anywhere in the State.

J. S. Shearman moved that we recommend the Haas apple for further trial. Carried.

W. Elliot moved the appointment of a committee to propose a list of apples worthy of recommendation for further trial.

Carried.

W. Elliot, T. M. Smith and P. A. Jewell were appointed.

DISCUSSION OF SMALL FRUITS.

On motion of Wm. Wilson, Currants were taken up. He inquired if there is an effectual remedy for the currant worm. Had found nothing sure but smashing.

T. M. Smith kept the ground perfectly clean during the season, stirring it till late in the fall, thus killing the larvæ deposited there by the worm. By pursuing this course he had met with no trouble.

Chas. Hoag stated that other insects besides the currant worm were destroyed in this way.

J. T. Grimes kept his bushes very clean, and met with no trouble while others around had suffered badly. Found sprinkling coal ashes effectual.

A. Stewart—have seen them gotten rid of by ridging the ground against the bushes, sprinkling ashes upon it, and shaking them off.

KINDS OF CURRANTS.

T. M. Smith—La Versailles, Transparent White, White Grape, and Black Naples. The Red Dutch is good, but the berry small. The Cherry does not succeed well.

J. T. Grimes—consider the Red Dutch as prolific as any. For white, preferred the White Grape, but had not tried the Transparent White. La Versailles is large, but a little tender, not so much so however as the Cherry. Red Grape is good, also the Victoria and Black Naples.

L. M. Ford—the Victoria and White Grape do well; Cherry does not.

T. M. Smith—the Prince Albert is late, large and very prolific.

W. Elliot cultivates fourteen varieties; the Red Dutch, had done the best by one third; the Victoria next.

A. Stewart preferred Red Dutch, the White Dutch, White Grape and Black Naples.

J. T. Grimes—Currants should be trained in the bush or bunch form always.

A. Stewart did not approve of cultivating in the stem form as they are so liable to be injured.

J. S. Shearman stated that wine from the Black Naples Currant is valuable for medicine.

T. M. Smith—this wine is an excellent diuretic.

L. M. Ford moved that we recommend for general planting, the Red and White Dutch, Victoria and White Grape, and for wine the Black Naples.

Carried.

THE GOOSEBERRY.

T. M. Smith preferred the American or Pale Red. The Houghton invariably mildews.

A. C. Hamilton—the Houghton does best in some parts of the State.

L. M. Ford had found it mildew badly.

J. T. Grimes—the Cluster grows upright; the Houghton trailing. The former bears more and better fruit, and it is easier picked. Neither had mildewed with him.

T. M. Smith—the Green Gage is not so good as those before named. The only place where European varieties succeed is around Orange, New Jersey.

J. S. Shearman knew of only one European variety, the Imperial Purple, that does not mildew.

T. M. Smith believed the generality of soil too rich for gooseberries.

L. M. Ford thought they succeeded better on higher, poorer ground.

T. M. Smith—the Mountain Seedling is the largest variety grown, but it winter-kills, and is not so good as the Cluster.

A. Stewart expressed a preference for the Houghton.

Chas. Hoag moved that we recommend the Cluster, Downings, and the Houghton.

Carried.

THE STRAWBERRY.

T. M. Smith would choose, in the order named, the Wilson, Green Prolific, Downer's Prolific, and Agriculturalist. Had not found the Triumph de Gande hardy. Thought the Boston Pine good; also Hovey's, when pure.

J. T. Grimes considered the Wilson the best market berry, though Downer's Prolific is better eating. The Green Prolific and Russel's Prolific—both pistillate varieties—are very good, the first fertilizing easily, the second with difficulty. Had not found the Agriculturalist hardy. The Jocunda is good and bears well, if covered. Thought the larger sized kinds do not bear as much fruit as the smaller. Liked the Nicaise.

J. S. Shearman named the Wilson, Green Prolific, Russel's Prolific. The Dr. Nicaise is very large, but he did not know about its bearing propensity.

T. M. Smith stated that Carpenter's Victory is the most prolific bearer he has, but very soft. Mulched with saw dust between the rows, and covered in Winter with straw. He moved to recommend for general cultivation Wilson's Green Prolific and Downer's Prolific; and for trial, Boston Pine, Agriculturalist, Jocunda, Russel's Prolific, Donnyworth's Prolific, and the Countess de Haricourt.

Carried.

He further stated that the Agriculturalist must have a rich soil.

THE RASPBERRY.

J. T. Grimes named in the order of ripening, the Purple Cane, Doolittle Black Cap, Miami Black Cap, and Golden Cap. This last ripens at the same time as the Miami, and is a great bearer. Its fruit is firm but rather seedy. After these come the Seneca, and Lum's Everbearing. He does not protect at all, and none have winter-killed. The best ground for raspberries is high brush land with a clay soil.

T. M. Smith—a slight covering of earth is entire protection for tender varieties.

L. Hand had the Philadelphia doing well and perfectly hardy.

T. M. Smith thought we should try our native berries. He believed we had them that are good; and mentioned a new variety, bearing yellow fruit, called the Minnesotian, which is said to be excellent.

Chas. Hoag has seen better berries growing wild in Minnesota, than any sold in the Philadelphia markets.

Mr. Wilson had seen the Catawissa on the grounds of the late Mr. Ford, of Winona, doing well.

Mr. Hamilton stated that it is not fruit like other varieties, and he considered it of little value as a market berry.

L. M. Ford thought highly of the Kirtland. Allen's Prolific is a nuisance.

A. C. Hamilton thought the Wild Black Cap, in some cases, equal to Doolittle's.

J. T. Grimes said the wild was not near so good as Doolittle's, and he would not recommend its planting. Catawissa is not good for market, and Allen's Prolific a poor fruiter, and hard to get rid of.

J. S. Shearman—the Purple Cane does not carry well, but bears a large crop of excellent fruit, and is perfectly hardy.

P. A. Jewell—the Philadelphia has proved hardy and very productive though the fruit is soft. The Catawissa is a strong grower, but unproductive. Had tried the Clark and it stands the Winter well.

A. Stewart found the Catawissa unprofitable. The Minnehaha Red, a native, bearing large fruit, he had found as productive as any other variety.

C. Hoag moved to recommend for general cultivation, the Doolittle, Seneca and Miami Black Cap, the Minnesota Yellow, Golden Cap, Minnehaha Red, Purple Cane, Common Wild and Kirtland.

Carried.

Meeting adjourned.

MORNING SESSION.—JANUARY 28.

Meeting called to order by the Secretary, and Mr. Wilson chosen to fill the chair in the absence of the President. It was decided to take up the last subject under the head of Apples. The Society proceeded to discuss the

CULTIVATION, PRUNING AND PROTECTION OF APPLES.

P. A. Jewell, would train a tree in the nursery to about three feet high and have limbs thrown out from that point. Is opposed to forks, as water settles and freezes in them to the great injury of the tree. Thought if a mal-formed tree were reduced to shape, it would be more likely to preserve health. Prunes the latter part of June and first of July, when the sap is in a plastic condition, thinning out the head and cutting off all limbs that interpose. When trees are cut earlier than this, the wounds do not heal over readily. It was his observation that protection from the sun was almost indispensable, and that where trees are exposed to it, and the circulation of the air poor,

they are easily injured. Did not think it necessary to cultivate the ground a number of years before setting out the trees. He cited several places where orchards had done well, when protected from the sun, though in otherwise poor localities. Noticed that they seemed to fruit better when exposed less to winds.

J. S. Shearman agreed in substance with Mr. Jewell. Thought the main part of the pruning should be done before the trees left the nursery. Would set out trees on high timber land with as much confidence immediately after being cleared as after it had been cultivated several years. Thought trees ought to be mulched Summer and Winter, when possible. Would ridge the land before planting, that water might run from the trees. Mulching in Winter is not so important when the snows are deep. Pruning should be done the last of June.

L. M. Ford believed in pruning. Prunes his Transcendents up straight for two years, and has no difficulty in forming good heads. Rubs off small branches whenever they appear in wrong places. Had pruned the Transcendent in the Fall without injury.

A. Stewart would prune a tree and pinch it back for symmetry while small. Thought the lower a tree branches, the better. Pruned in June or August; many trees are killed by winter pruning. Thought it necessary to mulch as protection from both Winter and drouth. Leaves are best to mulch with. Fruiting of trees is injured by winter pruning.

J. S. Shearman had known hardy kinds killed by winter pruning.

E. B. Jordon had found more trees affected by black heart on sand than on clay. More trees are killed by freezing and thawing in the Spring, than from any other causes. Mulching will often save them.

Mr. Hamilton had found that trees not mulched, became diseased, while those mulched came out all right. Thought it better to delay mulching till the ground freezes.

Chas. Hoag offered the following resolution :

Resolved, That this Society approve of pruning trees while they are small, and in this region. in the latter part of June or early in July, and recommend free mulching in Spring and Fall.

Adopted.

The chair was then assumed by the President.

NEW SEEDLING APPLES AND CRABS.

A. Stewart stated that his seedling No. 7, planted in 1857, had proved perfectly hardy. The tree has borne three years, and the fruit is a little smaller than the Transcendent, of good flavor and keeps until January.

Messrs. Hoag, Shearman and Grimes, stated that they had tasted the apple, and considered it good and the tree perfectly hardy.

P. A. Jewell had several seedlings of much value. (1.) A full crab, size of Transcendent, of an oblong shape, deep red color, sweet and mealy. (2.) A small winter crab, greenish yellow, sweet and good. (3.) Russet, Sweet

Crab, size of Transcendent, and delicious. Its keeping quality has not been tested. A fine growing tree. (4.) Sweet Crab, red, with stripes, about the size of the Transcendent, and of fair quality and keeps till the first of February. (5.) Keeps till June, otherwise, same as (4.)

Mr. Jordan showed a specimen named "Fellows," one-third larger than the Transcendent, a good apple.

P. A. Jewell stated that he would present, at the next meeting, thirty or forty new varieties, and give their history.

Col. Robertson expected great excellence of fruit from seedling crabs in the future.

Mr. Brimhall stated that out of fifty seedlings none had died. Had obtained five trees by budding upon stocks of the common Red Siberian.

Chas. Hoag thought that these experiments with seedlings would result in producing some fine apples, and that they should be encouraged.

T. M. Smith inquired whether any one had tried hybridizing the crab with the common apple.

Chas. Hoag thought that many of our new seedlings might be the result of such a union.

D. A. J. Baker offered the following resolution :

Resolved, That this Society commend the efforts of our nurserymen, and others, to produce new varieties of the crab and common apple, adapted to the soil and climate of Minnesota.

Adopted.

Col. Robertson stated, the question having been mooted as to the existence of hybrids between the crab and common apple, that there were such hybrids, and that others could be obtained. He feared that if the names of new seedlings were endorsed before testing them, the Society might be looked upon as an advertising medium.

A. C. Hamilton believed the different kinds of seedlings should not be mentioned.

Chas. Hoag thought that if we recommended experimenting, it was the best that the people should know what good results had been effected already.

T. M. Smith said we ought not to recommend these new varieties for cultivation till they have been longer tested.

A. C. Hamilton believed P. A. Jewell had, in his collection, many that were very valuable.

S. Hunt stated that he had a seedling one-half larger than the Transcendent, sweet, and a good keeper.

L. M. Ford cited several cases where promising seedlings have failed, and thought they ought to be tested long and carefully before receiving the endorsement of the Society.

D. A. J. Baker hardly saw what our work would amount to unless we could recommend something.

P. A. Jewell said we must rely upon the crab, and give it the greater prominence.

D. A. Robertson thought it might take a hundred years of experiment to

produce as fine varieties of the crab as we have of the common apple, (*Pyrus Malus*.) Had seen fifty new seedlings worth propagating.

P. A. Jewell thought that since in three-fourths of localities the common apple could not survive, the crab should be placed on a footing of equality, at least.

L. M. Ford spoke strongly in favor of pushing the Siberian species.

Wyman Elliot moved that this Society solicit names and descriptions of fruit from seedling apples and crabs that have proved hardy in our State and Wisconsin.

Carried. (See Appendix "B.")

The committee on "kinds of fruit" reported the following varieties as recommended for further trial in favored localities: Tallman Sweet, Sweet Pear, Fameuse, Ben Davis, Blue Pearmain, Fall Orange, Golden Russet, Perry Russet, Red Astrachan, Price's Sweet, St. Lawrence and Bailey Sweet.

Report adopted.

D. A. Robertson considered "favorable localities" those near bodies of water.

T. M. Smith called attention to Beecher's fruit basket, of which he presented several specimens. Thought them very economical for fruit growers.

Chas. Hoag moved to recommend to fruit growers the use of Beecher's Veneer Fruit Basket, manufactured by A. Beecher & Sons, Westville, Conn.

A. Stewart believed orchards should be protected by wind-breaks on all sides.

Chas. Hoag thought means should be taken to bring the Society's Report before the public.

D. A. J. Baker moved that Messrs. Hoag, Stewart and Grimes be appointed a committee to devise a way to effect this object.

Carried.

Meeting adjourned.

AFTERNOON SESSION.

The meeting was called to order by the President. The following report by the committee on publishing the records was received and adopted.

The committee appointed to propose a plan for disseminating the Secretary's Report of the proceedings of this meeting, would report—That in their opinion the best mode would be to print one thousand copies in pamphlet form, and that the Secretary *pro tem.* be instructed to attend to that duty.

At the suggestion of the chairman contributions were made, amounting to \$10.35, to assist in defraying the expense of such publication.

D. A. J. Baker moved to discuss the Blackberry.

Carried.

THE BLACKBERRY.

J. T. Grimes had had the Kittatinny three years. Pruned it back to two and one half feet in the fall, and covers it with straw. It fruited well year

before last—not as well as last year. Is yet undecided whether it will pay for market. The Missouri Mammoth is not so hardy.

T. M. Smith—the Lawton and Newton's Thornless had not succeeded. The Kittatinny came through the Winter well, also, the Wilson's. Believed Blackberries were to be found in the northern part of the State well worth cultivating.

A. Stewart had tried the Lawton with no success. Has picked berries in Le Sueur county just as good.

L. M. Ford has the Kittatinny, Wilson's and Missouri Mammoth. The first looks the best, but he is not yet assured of its success. Thought wild ones could be found that have very fine fruit, but they are poor bearers.

D. A. Robertson believed the wild ones would do well when they were thoroughly mulched.

On motion of T. M. Smith, the subject of Grapes was taken up.

GRAPES.

Mr. Smith said that they should be planted eight feet apart on land trenched to the depth of two feet and under drained—drains three feet deep, once every thirty feet. On ground treated this way, the frost keeps off two weeks later in the fall and the soil is in condition for planting two weeks earlier in the Spring. The ground should be thoroughly cultivated, and nothing planted in the vineyard after the second year. Prune off the surface roots for six inches below the ground every fall, when the vines will not be liable to injury from frost or drouth, nor will they drop their fruit. He has met with no loss from mildew or other disease. The Delaware has never leaf-blighted with him. Has picked twenty-five pounds from a plant of the Northern Muscadine. Commenced planting grapes in 1860, and has thirty-seven varieties growing, out of which he has fruited twenty-seven.

J. S. Shearman moved that T. M. Smith be requested to prepare an article on grapes, to be published in connection with the records.

Carried. (See Appendix "A.").

W. Elliot inquired whether grapes could succeed on sandy ground.

T. M. Smith—grapes like clay or limestone soil.

L. M. Ford had great faith in grapes, and believed strongly in trenching.

T. M. Smith covered with burnt manure. Straw is equally good if means are taken to destroy mice.

J. S. Shearman thought prairie hay good.

C. Hoag suggested the bottom of an old hay stack.

T. M. Smith thought it safe on trenched ground to cover with earth.

J. T. Grimes offered the following, which was adopted :

Resolved, That any subject called for by resolution or otherwise, be published as an appendix to the Secretary's Report.

A. W. Latham moved that a committee of three be appointed to select grapes suitable for general cultivation.

Carried.

T. M. Smith, D. A. Robertson and J. S. Shearman were appointed by the chair

On the motion of D. A. Robertson, thanks were tendered the Historical Society for the use of their room, and an appropriation made of three dollars to defray the expense of cleaning the same.

The committee on grapes reported the following varieties to be recommended by the Society for general cultivation: Delaware, Iowa, Rogers' Nos. 4, 15 and 19, Creveling, Northern Muscadine, Concord and Hartford Prolific for general purposes; Oporto and Clinton for wine.

The Society then adjourned.

A. W. LATHAM, Secretary.

APPENDIX A.—GRAPE CULTURE.

1. *Soil, Situation and Expense.*

The best site for a vineyard is the south side of a hill, and near the top, where the vines will get the full benefit of the sun and air, and where they will be fully protected from cold and chilling north winds. The soil must be warm, dry, deep, and thoroughly worked from the depth of eighteen inches to two and a half feet, the deeper the better, and both surface and under-drained if possible, in order to get the best results.

2. *Planting and the Kinds of Plants.*

I prefer and would recommend good extra two year old plants grown in open air from good long cuttings, or well rooted layers, but in any event, plant only the very best plants, even if you pay extra prices therefor, and shorten in all long and straggling roots, and cut the cane back to two buds or eyes, and in planting dig your holes deeper than necessary to put the roots straight down, and when you have partly filled in with fine, soft, pulverized earth, draw your vine up to straighten the roots down, so that the top bud or eye will be on a level with the ground, and fill in carefully up about the vine, placing a stick on the north side of the vine to tie the young growth to as the vines grow, and when the vine gets well started, see which bud starts the strongest and rub off the weakest one, and carefully tie up the young growth to the stake as necessary. Vines should be planted at least eight feet apart each way, and some low growing crop might be grown between the rows for the first two years, such as strawberries kept in hills or rows with runners clipped; and in Fall after the frost has killed the tops and leaves, the vines should be cut back to two buds or eyes, and carefully covered with fermented manure

3. *Cultivation.*

The ground must be carefully clean from all weeds, and kept loose and mellow the whole season, or every season I should say, for when the vines come into fruit, it is absolutely necessary they should have all the sun and air they can get, and by being kept perfectly clean from grass and weeds and other crops, and the ground loose and mellow, it will absorb heat during the day and give it off during the night, and thus when we have cold nights often avoid a frost or check in growth of fruit and foliage, what is so much needed in this northern latitude.

4. *Time of planting.*

I prefer spring planting, from the first to the middle of May.

5. *Variety to plant.*

Delaware, Iowa, Creveling, Early Northern Muscadine, Hartford Prolific and Concord, and

Rogers' Hybrids Nos. 4 and 15 for table and wine, and for wine alone Clinton and Oporto; the last is the hardiest grape I have grown of thirty-seven varieties, but is only good for wine or jelly, and the above list affords sufficient variety for all ordinary purposes.

6. *Pruning and Protection.*

Now it is impossible for me to give good and correct rules for pruning without cuts or engravings to represent my meaning; and even then it would not be possible in the space allowed me in this essay, for which I will refer your readers to Fuller on the Cultivation of the Grape, and other standard works; but as we in this cold climate must always lay down our vines in the Fall for *winter protection*, we cannot follow any established rules of the books except Mr. Fuller's oblique system, as he styles it. But the vines must be pruned in November, and after pruning, laid on the ground and protected. I use for covering fire fanged or burnt manure that I get from the livery stables in the city, and cover three or four inches: two inches is enough if carefully put on. In addition to fall pruning tops, I also remove the earth about the roots, and carefully cut off all surface roots from the main stock to within six inches of the surface, then replace the earth and hill it so as to turn water from the vines. I use trellis posts made of red cedar, set eight feet apart, and one-quarter by three inch strips sixteen feet long, nailed or spiked, one on top of the posts, and the other spiked on to the posts about one foot from the ground, and to these nail upright slats or laths half inch by one and a half inches, and five feet long, making a trellis six feet high. This, I find on trial, the best I have ever known.

I have not failed to ripen my crop of grapes since 1860, the year I commenced growing grapes; and think that any of the above kinds recommended, if in proper soil and location and well taken care of, will ripen their fruit at least nine years out of ten, and perhaps more. I have never had any mildew or rot, or any of the diseases so prevalent south of us. Even the Delaware has never failed to bear good crops, or to maintain health and carry its leaves until killed by hard frosts. I have raised twenty-five pounds to the vine of Northern Muscadine, but I consider ten pounds a good average crop for a vineyard, if we would get the best and highest flavor of fruit, and keep the vineyard in a good, healthy condition. Most persons, especially new beginners, persist in over-cropping their vines, especially young vines, and from which they never recover.

I will here say that having been sick, and not having the time to devote to this subject which I hoped to give it when at the meeting of the Horticultural Society, the Society will make due allowance for all mistakes and imperfections in this hastily written essay, and accept it as an excuse for something better which I would have written had I had the time and talents to do so.

TRUMAN M. SMITH.

ST. PAUL, Feb. 27, 1869.

APPENDIX B.—SEEDLING APPLES.

In accordance with a resolution adopted at a meeting of your Society, I send you the following description and history of the seedling apple trees, specimens of the fruit of which I exhibited at that meeting.

In the Spring of 1852, a small quantity of apple seeds, selected from the most hardy varieties of fruit raised in Canada and the State of Maine, was planted on the farm of Otis Hoyt, in St. Croix county.

The result was, several hundred fine young trees which grew vigorously for two years, when they began to gradually die out from the effects of our climate, until at the end of five years two only remained. These two were transplanted at that age to their present location on his farm, and have continued a healthy and vigorous growth, and are now fine symmetrically formed trees, about sixteen feet high, not a twig or terminal bud of which has been killed during the sixteen years of their growth. The wood is perfectly sound and well colored to the heart in limbs two inches in diameter, which have been cut off to test their healthiness.

The larger of these apples we have named Hoyt's Seedling. The fruit is about one-half larger than the Transcendent, a little more flattened from stem to blow with a crease or

depression extending down one side, of a fine golden color with a slight crimson tinge upon one side, a very fine flavored, mild sour, eating fruit.

Specimens are at this date (Feb. 1st) in a good state of preservation, and bid fair to keep a month longer. The wood closely resembles the Transcendent in its growth, though not quite so rank.

The second of these has been named Hunt's Seedling. Its fruit is rather smaller and more regular in its form than the former, in the latter respect more resembling the Transcendent, of a golden yellow color, with a bright crimson cheek. In flavor and keeping qualities about the same as the first, growth of wood not quite so rank.

These trees have been grown, both before and since transplanting, in an ordinary prairie, sandy loam soil, and in an exposed location.

For the last two years these trees have fruited abundantly, and have made a fairer show than any other trees I have seen except the Transcendent. The owner of the farm on which they grow has long appreciated their value, but not being a propagator of trees, no attempt has been made to increase the stock until the past season, when he placed them at my disposal. I am this winter grafting all the last season's growth upon yearling stock, raised from seed selected from hardy varieties of apples. I have no doubt they will prove a valuable acquisition for this section of the country.

S. HUNT.

HUDSON, St. Croix Co., Wis.

MINNESOTA SEEDLING APPLES

1. Yellow Winter Crab. Fruit one-third larger than Transcendent, and six inches in circumference; deep red color; stem long and slender; core small, with but few seeds; flesh, tender and juicy, slightly acid, having little or none of the astringency of some other varieties; its season is till April or May; very valuable for table or market as a Winter variety. The tree originated in the old seedling nursery of Mr. Rollins, of Elgin, Wabasha county, and is now in the yard of Mr. Felloes of the same place. It stands on prairie, without protection, and is perfectly hardy; quite as vigorous a grower as the Transcendent.

2. Russell's Sweet Winter Crab. Fruit size of Transcendent; form rather long; color same as Tallman Sweet, of which it is supposed to be a hybrid, and which it resembles very closely in quality of fruit; flesh very sweet, tender and juicy; it has no superior in flavor or quality of fruit, either for cooking or dessert, among our best grafted sweet apples; tree perfectly hardy and moderately vigorous. This variety originated with Mr. Russell, High Forest, Olmsted county.

3. Russell's Fall Crab. Fruit some larger than the Felloes; color bright red on the side next the sun; flesh sub-acid and of good quality; season in August and September. Origin same as 2.

These three varieties are being introduced and propagated by E. B. Judson, Rochester, Minnesota.

I send you a brief history of three varieties of seedling apples which I selected out of what I raised from a half bushel of seed planted on a sandy ridge on the LeSueur prairie the spring of 1856. They came out sound and good, while thousands failed in the same rows.

Being struck with their hardy appearance, I commenced propagating from them, and have distributed them for trial in LeSueur, Nicollet, Blue Earth and Hennepin counties. Have had them planted in both clay and sandy soils, and they have proved hardy in every instance.

They are designated by the numbers 2, 7, and 8. No. 2 fruited first in 1867; fruit medium size, flavor sweet. No. 7 fruited first in 1866; fruit small, flavor sweet. No. 8 fruited first in 1864; fruit small, flavor sub-acid.

Yours truly,

A. STEWART.

RICHFIELD, Hennepin Co., Minn., Feb. 4.

In the outset, in giving a history of Fruit Culture in Minnesota, it was deemed best to endeavor to greatly condense or abbreviate the proceedings had at the several annual meetings of the Horticultural Society; but when a close examination was made of the records to see if possible what could be omitted—if any thing—it was found that these debates comprised invaluable experiences of the very pioneers in the cause, that they were a record of experiments in every line of fruit growing such as in many cases have not been improved upon since.

Indeed, to any one who sits down to examine deliberately into what has been done, it will be found that there appears to have exhibited marked acuteness and observation in hitting upon what was most wanted; and this is so true, that a perusal of the proceedings had at the very last meeting at St. Paul—(this past winter of 1873) will show only in many cases a *verification* of facts put forward in the first one or two years after the organization of the Society.

And whilst it may be true that the repetition of many of these facts and experiences, may make this work less varied in the incidents presented, it will add to the value of what is given, inasmuch as it will offer to public consideration a confirmation again and again of the facts hereafter to be relied upon in making Minnesota a fruit growing State. This, then, is the excuse, if any should be needed, for letting those men be heard, who have reached success through such pertinacity in adhering to strong convictions as to the best modes of gaining what they so earnestly sought.

THE ANNUAL MEETING AT ROCHESTER, OCTOBER 2, 1869.

The annual meeting at Rochester, October, 1869 is the next gathering to be noticed and, according to the Rochester Post, of the 2nd of that month, took place at Whiting's Hall, in that place, in the evening, on which occasion the following named gentlemen were elected officers of the Society, for the ensuing year:

President—John S. Harris.

Vice-President—Charles C. Cook.

Recording Secretary—J. W. Harkness.

Treasurer—Wyman Elliot

EXECUTIVE COMMITTEE.

S. Bates, Winona Co.

Lewis Martin, Anoka.

J. T. Grimes, Hennepin.

H. E. C. Barrett, Rice Co.

P. A. Jewell, Wabasha.

The Society were to hold a meeting at St. Paul on the first Monday in Feb. 1870. J. S. Shearman, J. W. Harkness, Wm. Stickney, P. A. Jewell, Wm. Wilcox with Col. Robertson as Secretary, were appointed a committee to

examine the fruit on exhibition at the Fair grounds, the committee to meet on the grounds, at 8 A. M. The fruit grower's and others present were requested to contribute specimens of fruit to be placed on exhibition in New York City.

ANNUAL MEETING AT ST. PAUL, FEBRUARY 2, 1870.

The Annual Winter Meeting of the State Horticultural Society, convened in St. Paul, on Wednesday, the 2nd day of February. In the absence of the President, John S. Harris, Esq., of Houston county, the Hon. R. J. Mendenhall, of Hennepin county, was elected President *pro tem*.

Hon. R. J. Mendenhall, Chas. M. Loring, and Robert W. Cummings were received as delegates from the Hennepin County Horticultural Society.

On motion, it was ordered that the session of the present meeting be continued for two days.

Ordered, That J. W. Harkness and Col. D. A. Robertson, be a committee to communicate with the House of Representatives for the purpose of obtaining the Hall for the evening session.

Ordered. That both Branches of the Legislature be invited to attend the evening meeting during the delivery of the annual address by Col. J. H. Stevens.

A committee was appointed consisting of Amasa Stewart, M. W. Leland, of Olmsted, S. Bates, of Winona, Judge Baker, of Ramsey, and P. M. Gideon, of Hennepin, on Order of Exercises.

On motion, the Secretary was directed to prepare a report of the proceedings of the meeting for publication, which should be considered the only official report.

The Society then adjourned to 4 o'clock P. M.

AFTERNOON SESSION.

Society met pursuant to adjournment.

Mr. Stewart from the committee on Order of Exercises, made the following report:

1. Soil and location best adapted to the growth of apples.
2. Variety of Apples.
3. Taking up, handling and planting.
4. How extensively should fruit be cultivated to receive the recommendation of the Society.
5. The Pear culture.
6. Plums.
7. Cherries.
8. Grapes.
9. Currants.

10. Gooseberries.
11. Raspberries.
12. Strawberries.

The committee recommend rules of action governing nurserymen sending out stock. They also recommend a small appropriation from the State, to be used by the Agricultural Farm in growing and testing fruits.

Which was adopted.

On motion of Col. D. A. Robertson, a committee consisting of Judge Baker Messrs. C. M. Loring, Leland and Jordon was appointed to report at the next meeting a system of organization.

The Society then took up the report of the Committee on Exercises, and the first subject was considered, viz. :

SOIL AND LOCATION BEST ADAPTED TO THE GROWTH OF APPLES.

Mr. Bates, of Winona, said he had resided in this State for fifteen years. His location was considered favorable by many for growing fruit; but he considered it no more so than many others. He raised apple trees as well on his grounds as they can be produced in the East. He thinks trees will do well in dry soil if not too much exposed from bleak winds. Mr. Aldrich, of his neighborhood, has over one thousand trees in his orchard that are very promising. His land is clay soil.

Mr. Stewart of Hennepin county, thought high locations the best, near water, favorable. The best soil is a sandy loam, clay sub-soil.

Mr. Gideon has been planting trees for fifteen years, some are doing well; has tried different soils; has found little difference in locality; tried north hill-side soil, rather light, with good success; never had good growth on black soil until he set the trees deep, say from six to twelve inches above the collar; has an orchard with trees surrounded by hills on the north. He cited many instances of good results from deep planting; has sold many trees planted on clay soil which did better than those planted on his own ground.

Mr. Leland said that with a northern slope protected by timber, deep working, and no manure, with winter mulching and proper care, trees will be successful in any locality.

Mr. Jordon thought the northern slope the most preferable. The sap starts on the southern slope in the Winter. His conclusions are that any soil with lime in it is good. He believed in protecting bearing trees.

Adjourned to 7 P. M.

EVENING SESSION.

The President announced the subject for discussion to be the "Varieties of Apples."

On motion, the discussion was postponed to the morning session, and Col. Stevens delivered the following address :

ADDRESS OF COL. JOHN H. STEVENS.

Mr. President and Gentlemen of the State Horticultural Society:

In responding to the resolution passed at the last annual meeting, I will now proceed to deliver the annual address, but I cannot assume the responsibility without much diffidence.

Permit me to congratulate you on the successful labor of the Society for the past year. Again has the old adage proved true, that patience and perseverance will accomplish many things.

We meet under the most favorable auspices. Since this time last Winter, the vine has produced more than forty kinds of grapes. The fruit of all fruits the apple, exceeded our expectation. We were favored with an abundance of small fruit. Choice varieties of ornamental trees have been introduced. The delicate, beautiful flower bloomed and imparted its fragrance to the air. An increased interest is being manifested by the people in that which is so closely connected with horticulture. The labor of the Society has not been in vain.

Horticulture is as much a branch of industry as agriculture. It is fraught with as much moment to the world. It is a necessity as well as a luxury.

Said Horace Greeley a few years since to Wilford L. Wilson—"I would not live in Minnesota!" "Why"? asked Mr. Wilson. "Because," replied Mr. Greeley, "you cannot raise apples." Now there are thousands who agree with Mr. Greeley, that a country which is barren of fruit is not fit to live in. This, however, cannot be applied to Minnesota. We are becoming a fruit producing people. The past season, apples were raised from the Iowa line through the great rich belt beyond the Sauk Rapids. Those who should know best believe we shall eventually supply the Valley of the Mississippi with this fruit, as we now do parties of the East with wheat and flour. This may appear visionary, but we should have been called visionary if we had predicted in 1849 that the embryo State was, in subsequent years to furnish New England with the staff of life: and yet the probabilities are more favorable now in regard to the apple than it was then to the wheat.

True, we were under a cloud for a long time. We planted but did not harvest. Our trees withered and perished. Whether it was the frosts of Winter, or the sun of Summer that caused them to prematurely die, no one has been able to determine. Plant as we would, the trees sickened and died. Possibly, and probably, tender varieties were used, which may account for a portion of the difficulty.

No wonder, then, we became discouraged. Orchards to the third and fourth planting, failed; a constant drain on the pocket without a ray of light in the future, influenced us in abandoning the enterprise. But those days, with their trials, have passed away. It is said that the same difficulties in regard to the propagation of the apple, had to be encountered in all new countries.

And yet some persevered. The far north was visited. Seed was gathered instead of trees. The germ of a few—very few, perhaps one in ten thousand,

may be one in twenty thousand, some say one in one hundred thousand—has brought forth fruit. Be this as it may, we have over two hundred varieties of seedling apples thus propagated, some of which are of rare merit and few of an inferior quality. One of these seedlings, the Wealthy, propagated by Peter M. Gideon, of Hennepin county, is pronounced by eastern pomologists to be superior to any new variety of apples that has been introduced for the last decade.

As the country becomes improved, as our soil becomes reduced to a proper state of cultivation, it seems that the *Pyrus Malus*, particularly in certain localities succeed in reaching maturity. Where the soil, or the climate, or some strange fatality was poison to them a few short years ago, they flourish now. Perhaps our seasons are changing. Evidently we have much to hope from certain standard varieties of apples as well as those seedlings of a Minnesota birth.

But should all of these fail, we have a reserve to fall back upon which is impregnable. The Siberian family are as hardy as the oak. They should be extensively cultivated. In our success with the *Pyrus Malus*, do not let us forget their half-brother, the Siberian. A few years since had we known their value we should have prized them more than silver or gold.

Let us "render to Cæsar the things that are Cæsar's." Let us pay tribute to our Harrises, Robertsons, Bates, Gideons, Summers, Rollins, Kellys, Posts, Fords, Stewarts Elliots, Brainards, Grimes, Drakes, Brimhalls, Good-years, Cooks, Bells, Hoags, Ways, Woodruffs, Martins, Harvey Wilsons, Norrises, Dorrances, Perkins, Woodward, Hawkins, Truman Smiths, and others who never faltered as the clouds lowered through so many dark years of failure.

Our soil, climate and latitude, seem favorable for prolific crops of small fruits. In the fall of 1856, Mr. E. Whitefield, the artist, sent some McLeod county soil to Prof. Hayes, of Boston, to analyze. That learned gentleman said that such soil should produce strawberries as large as New England walnuts. Why, the treasurer of this Society raised last year near three hundred bushels of this fruit. By a copious use of this healthful berry, fevers are banished from our households. The strawberry of Minnesota is not the strawberry of the Egyptian region of Illinois. Ours is juicy, fat, plump—suitable feasts for the gods. Our raspberries, currants, gooseberries, blackberries, blueberries, are all cultivated with so little labor, and so reliable and hardy, that it is in the province of every household to have them.

The cranberry, too, is a profitable luxury. Large quantities of the wild fruit are shipped every autumn. We have the testimony of Wyman Elliot and A. D. Foster, gentlemen of acknowledged horticultural worth, that the cranberry can be cultivated with great profit. Late frosts in the Spring are the bane of this fruit in New England and New Jersey, but here we are free from such visitations, which renders it unnecessary to overflow the marshes to prevent the frosts from destroying the blossoms. It is reduced to a certainty that from four to six hundred dollars per acre can be realized from properly cultivated fields of cranberries.

For the first time we gathered tame cherries last season. Previously we failed. This valuable fruit in the early years of the State, seemed to follow the apple and was thrown aside. It may now be considered as one of our profitable products.

The record on grapes is satisfactory, and more favorable than expected. Some forty varieties are in bearing. From one vine four years old, Richard J. Mendenhall, the able President of the Hennepin Horticultural Society, harvested over two bushels of Delaware grapes. The quality of the grapes is infinitely superior to those from below. As Mr. Mendenhall is an educated horticulturalist as well as a thorough entomologist, the Society can profit by his experience. Your attention is most respectfully directed to the success of Truman M. Smith, of St. Paul, in the culture of this superior fruit.

Whether a very great improvement can be made in the introduction of new varieties of plums remains to be seen. Our natives are very desirable. While most all the old standard varieties have reached a doubtful maturity, those to the manor born are being cultivated, and the quality of fruit greatly improved. The Excelsior, Harrison, and several other varieties are quite equal to the Miner and Wild Goose, and scarcely inferior to the standard plums of the Middle States.

Our progress in regard to peaches is far from satisfactory. Its cultivation may afford recreation to amateur gardeners, though we have several instances of the trees bearing fruit the past season, and it is not impossible but at some future day the more hardy varieties may be cultivated with profit.

The pear also fruits. But little attention has been bestowed to its cultivation, and that little in an indifferent manner; but the trial is worth making, with a reasonable prospect of success.

As a people, much attention is given, and homage rendered at the shrine of Flora. It is not local. Orders are sent from most every postoffice to Vick, Bliss, and Peter Henderson. Lawns and flower gardens are appreciated. Fragrant roses, scarlet lilies, magnificent climbing vines, command the attention of the ladies. The royal dahlia, the double petunia, fuchias, geraniums, gladiolus, heliotrope, hyacinths, pelargoniums, tulips, verbenas, and kindred flowers and plants are becoming household words. The early Spring is welcomed by white, yellow lilac, blue and striped crocus, in advance of the bright, yellow, honest blossom of the dandelion. These gifts are God's bountiful blessings. The home is happy when the the flowers bloom.

The list of shade and ornamental trees should receive the attention of the Society. We have those that are upright and those that are drooping. We can select from native varieties and from those that are imported. We have the elm and maple which are so beautiful in New England, and to which that section of the Union is so much indebted for a large proportion of its picturesque scenery. We have the mountain ash with its emerald foliage, and ermine fruit; the linden, hackberry, the silver-leaved poplar, coffee-tree, the golden and white birch. This is a native list. Why not dot the roadsides with them? skirt the fields, fill the yards—a home for singing birds, a pleasure for every one who has life and being? We have, too, the green-boughed

pine, cedars, spruce, balsams, with their quiet and gentle ways, to weave into the different nooks, corners and by-places, thus adorning our city homes, and making the village residences so handsome in the free broad country which God made.

Of ornamental shrubs such as the acacia, flowering almond, barberry, snow-berry, and snowballs, spireas syrenga, with the evergreen, holly leaved shrubs, selections can be made that cannot fail to be satisfactory.

The Society should lend its influence in encouraging the cultivation of timber on the prairies. In less than a decade from the time it is lodged in the ground, the European Larch will be of a sufficient size for a fence post. This is a question which must be met. We cannot conceal the fact of the existence of a large treeless district west of range thirty—extending to the Dakota line. This vast territory contains the richest soil in the State. "Rough hew it as we will," fuel is becoming less and less as each year rolls around. How easy to reverse this misfortune.

The attention of the Society should also be bestowed upon the propriety of the early introduction of live fences or hedges. They are the cheapest, the best fence in use, and a system of hedges can be inaugurated that will be lasting.

The cultivation of several products of a semi-tropical character, such as the sweet potato, has received considerable attention for the past few years. The experiment has proven satisfactory. We are assured that it is a law of nature, that all plants, fruits, and roots as well as flowers, reach greater perfection in a climate visited by snow in the Winter; but the season should be of a sufficient length to afford time for them to reach ripeness before interfered with by the frosts. It is demonstrated by actual experience that those products of a tropical or semi-tropical origin become matured in less time in this State than in the latitude of St. Louis. It is also proven that the properties, richness, and qualities of these products compares favorably with those raised at any point north of the rapids of the Lower Mississippi, in the neighborhood of Keokuk, Iowa, or in Central Iowa, and in some instances they are proved of superior quality.

The importance of devising ways and means for the protection of our orchards from the severe winds will not be questioned. These wind-breaks must necessarily be composed of belts of trees, because air is necessary for the good health of the fruit-trees, and it wont do to cut it off from a free circulation in the orchard by a solid wall. Deciduous trees, such as the willow and ash and evergreen, say the Norway spruce and red pine, are fast growers. We have been obliged to ferret out our own horticultural difficulties. We have no precedents to follow. That which is a balm in New England, is a poison here.

We have much to expect from a proper system of hybridizing. It is said that the bee and other insects, as well as the wind, have an agency in transmitting the pollen of the blossom from one tree to another. When these things are understood, it would seem that we could accomplish much in the production of new varieties of the apple, and perhaps other fruit. It is sup-

posed that the Transcendent, Hyslop, Grant, Colfax and other apples so common in our gardens, are the accidental results of hybridizing of the Siberian with the common apple. If by the result of accidental propagation choice and new varieties of fruit have been introduced, there is no end to the bright hopes that may be realized by the educated hand of man in the same field.

The Society will have occasion to use their influence to protect the people of the State from the imposture of tree peddlers. These sharks frequent every locality. It is only safe to purchase trees from reliable nurserymen and their agents.

This is the land of insects. Our bugs and worms, our catapillars, leaf and bark lice, ticks, ants, flies, millers, moths, borers and maggots eat long, devour late, consume the foliage of vegetation, and frequently strip an apple tree at one sitting. They are destructive when in the larvæ, as well as when full grown. They are the terrible enemies of the Minnesota horticulturalist. How necessary is it for us to have a State Entomologist. The study of entomology should be a study in our schools.

It is to be hoped that the day is not far distant when every school house will have its flower garden and nursery, so that the scholars may also be taught the art of grafting, budding, and other matters pertaining to horticulture.

Experience has taught us that mulching is necessary. There is not a tree that bears fruit, not a shrub or vine, or cane, that produces berries, but is all the better for this handiwork. Plant as we may, cultivate as we will, or whatever may be the quality of the soil, or however favorable our grounds may be, mulching is indispensable. It is necessary in cold weather, in warm weather—necessary at all seasons.

The important matter of pruning will occupy your attention. We all want to know at what season of the year it is best to apply the pruning knife. Some of us are favorable to early Spring, some one time, others at another. My own experience is that the first of June is the best season. Trees should be cut back for their own good, and the question is, at what season of the year should this be carried into execution?

The Society should impart to the people of the State what variety of soil is best for setting out orchards. The lay of the land, or the exposure of the surface should be considered. A northern exposure is considered by many to be much better for the growth of apples than a southern one. In central Minnesota a northern exposure with clay sub-soil, is desirable.

The subject of grafting is one fraught with much moment to us, and we are now educated to one fact in this matter, and that is, the only reliable trees for this section, are those which are grafted in the root. Stock grafting will not answer our purpose at all. Many of our nurserymen who propagate only hardy trees, are prone to use tender varieties of apple roots for grafting purposes. In consequence of this oversight unless the trees are protected by heavy mulching, they are liable to root-kill in the Winter. Thousands of

Siberian Crabs were killed a few years since in consequence of being grafted into the tender apple roots.

We have a law on our statute books, requiring the proper officers to make annual returns of the quantity of grain raised, the number of horses, cattle and sheep, the amount of hay cut, and other important statistical matter in each town, which is sent to the capital and properly published. The law is a good one as far as it goes. Such information is valuable, but why not include in the returns the number of bushels of apples raised in each town, the quantity of strawberries and other fruits produced. It is presumed that an amendment of the law to this effect would meet with the hearty approval of the people.

The Society at its last annual meeting passed resolutions respectfully asking a small appropriation to be expended under the auspices of the Society. As an incident of the beneficial aid secured from the State, Kansas, last season, through the Legislature of that State, granted the small sum of five hundred dollars to their State Horticultural Society. With this money all the new seedling apples were gathered and forwarded to the American Pomological Society at its meeting in Philadelphia. The result was that the new State took the first premium on new varieties of apples. No one for a moment doubts, who is fully posted in regard to the quality of seedlings, but what Minnesota, had she been represented, would have produced the better apple. It is to be hoped that our excellent Legislature will cheerfully respond to the petition of the Society.

The Society should, at the earliest possible period practicable, hold a State Fair. Through the aid of the State Agricultural Society, we are able to place on exhibition the fruit of our labor; but it is presumed that a separate Fair would be more satisfactory to the horticulturists of the State. The few county fairs which have been held reflected much credit on the Societies. The one at Minneapolis on the 4th of last July, under the superintendency of that efficient horticulturist and florist, Chas. M. Loring, Esq., was pronounced superior to any thing of a kindred character ever held this side of Chicago.

The Society has been honored by the appointment of one of its members to the Professorship of Agriculture in the State University and Agricultural College. It is a matter of congratulation that so good an appointment was made. The welfare of those who are in attendance at that popular institution will be safe in his hands.

The West has sustained a severe loss in the death of Benjamin D. Walsh, State Entomologist of Illinois, which melancholy event occurred at Rock Island, on the 15th of last November. His labor for the past few years has been of great service to the people of this continent, particularly to those engaged in horticultural pursuits.

The Society has a great work to accomplish. The mission is not simply the propagation of fruit, but it is to add comfort to the people of this great commonwealth. We wish to make their homes cheerful, happy and pleasant.

Contrast the door yard that is full of weeds, ragged grasses and litter of every description, with a beautiful green lawn, mixed with damask roses,

climbing vines, blooming asters, an occasional evergreen, snowballs, and other ornamental shrubbery; and only consider that one costs but little more than the other. Who ever saw a house on the prairie without a shrub or tree planted around it, but did not feel that it had a lonesome view? Wheat stacks and straw piles as large as small mountains will not suffice. Something is wanting to give it a home-like appearance. We find that it is not so expensive to raise precious herbs, such as rosemary and sweet basil, as it is to let wild buckwheat, burr weed, mullein, fennel and cockrel flourish.

It cannot be expected that we can disseminate the work we are engaged in, without the aid of the press of the State. The newspaper is the great propagandist of information, and every publication from the Iowa line to Lake Superior, from the Mississippi to the borders of the Redwood, are in sympathy with us, and the fruits of our labor are transferred by these faithful missionaries to the firesides of the people.

New horticultural pursuits are being developed. For instance, it is not too much to expect that the day is not far distant, when sugar, made from the beet, will be a great staple of the State.

We know that horticulture must travel hand in hand with agriculture, and there is no reason why the farmer should not have his orchard and garden as well as his wheat, his oats, and corn. Since the organization of the territorial government in 1849, up to the present time, there never was a people more prosperous than the farmers of this State. By industrious habits and sterling integrity, they have made the wilderness to bloom like a garden. The choicest herds to be found in the East have been introduced by such enterprising gentlemen as Col. Wm. S. King, Wm. L. Ames, M. C. Potter and others. These herds occupy the same grounds so recently the haunts of the buffalo. Every civilization found in any part of the world dwells here. A healthy and pleasant climate, a rich and fertile soil, all that is wanted to make us favored beyond the lot of almost any people, is more attention to horticultural matters. This can be done without neglecting our crops of grain, our great healthy fat stock, and the general work on the farm.

Croakers we have. They are found in every community, but they are growing less and less each year. It is expected that there will be no croaking by and by. They are becoming convinced. When they see the same varieties of apples, such as the Duchess of Oldenburg, the Tetofsky, the Transcendent, one-third larger—of an infinitely superior quality over those grown in the East and further South—it is expected they will be willingly convinced. Probably it is a law of nature that all apples that reach maturity here are larger than those raised from five to ten degrees south of us. When we consider what has been accomplished, the manner in which so many obstacles have been overcome, we cannot but feel that we have a bright prospect for our future success. Let the Society then renew their work with increased vigor.

It is to be regretted that the President, John S. Harris, the best horticulturist in Houston county, cannot be with us. He is confined to his home by severe illness, but he sends his heartfelt greetings, and assures the Society

of his continued co-operation with the members in forwarding the good work. He writes that his faith increases every year that we are to have a fruit growing State.

In concluding this imperfect address. I hope you will permit me to suggest to the Society, the necessity of a correct report of our deliberations. The people should not be deceived, but a correct report of the proceedings should soon be sown broadcast over the whole State.

A word more and I am done. There is no reason why a person who propagates a new variety of apples, should not have the benefits of that discovery. The property is as much his as any property on his farm, and he should receive the benefits of his property. Trusting that our labors may be crowned with success, I leave all these matters to your better judgment.

A vote of thanks was tendered for the able address.

The third subject of discussion—

“ TAKING UP, HANDLING AND PLANTING,”

was taken up.

Mr. Gideon objected to cutting off the tap root, took great pains in planting to have roots in plenty. Did not tramp the dirt, but pressed it with his hands; mulched; never watered. In packing, used moss, taking pains to have it between the roots; considered dry straw next to nothing. In setting out cut back in proportion to the amount of root; had cut some back to stubs, but they did not grow; would leave some top, preferring low ones—under one foot; those with a tap root always do best; preferred No. 1 one year old trees. He never had a low headed tree sun-burned.

Mr. Grimes—we cannot be too careful about cutting or bruising the roots; as to age, recommended from one to two years old, never over three. In setting out, would trim the roots from beneath—if not so cut, they may become diseased; approved Mr. Gideon's plan of setting, excepting he would dip the roots in water; mulching was equal to a life policy; in the fall-planting would mound up, but preferred spring setting; would procure trees in the Fall and head in.

Col. Stevens—trees should be taken up without bruising or drying them; thought side roots more beneficial than the tap root; thought transplanting benefited the trees.

Mr. Gideon had trees of the same variety, some of which died, the others doing well. On examination he found in each instance that the dead one had no tap root. They were, however, set on the shallow plan; had not adopted the deep planting until last Spring. He generally leaned his trees to the southwest.

Mr. Jordan—nature favors the tap root; had not favored the practice of cutting off the roots; thought the most successful plan was to set the whole root, using No. 1 one year old trees and heading them.

Mr. Dart had, in Wisconsin and in Minnesota, two thousand trees in orchards; he paid no attention to the tap root; never watered; at first adopted the low top plan, but tired of it because he could not cultivate; trees must be cul-

tivated. He then trimmed up so that he could cultivate with horses and had good success; thought that with side roots the tree grew faster; thought many of the new seedlings must fail; did not favor the large hole—it stimulated too large a growth; favored large trees; the low trees were only “fashionable;” would mulch in severe drought; had injured trees by mulching and then neglecting it; if it is commenced, it must be followed up; clean cultivation is the best; favored close planting; until the last year his experience had been in Wisconsin.

Mr. Gideon never took the mulch away; when it rotted he added more to it; thought a high topped tree was about as useful as a six foot neck on a man.

Mr. Wheeler asked what would make a tree bear?

Mr. Theo. Bost, of Carver, said he had two trees, one near a cattle yard, which was thrifty but barren; the other farther from the yard, was not so thrifty in growth, but bore well.

Col. Stevens favored young trees and low heads.

Col. Robertson—if we follow nature, we will only produce crab apples. Disagreed with Mr. Gideon in the matter of tap roots; thought it had been settled long ago. It was a physiological fact that the side roots and their fibres fed the tree—cited numerous authorities to confirm his statement; trees were made more prolific by increasing the feeding roots; favored deep planting because it protected the side roots; mentioned the case of Mr. Lees, of England, who moved his trees every year to increase their yield; you can move a tree of any size if you carry with it all its roots.

Mr. Leland—it is remarkable how transplanting increases the roots, and he thought the plan was very beneficial.

Mr. Hoag—thought transplanting bearing trees impracticable; if successful it was miraculous. The tree might put on growth, but would scarcely bear fruit.

Mr. Stewart agreed with Mr. Robertson; had moved a tree in the Fall, transplanted three times previously, and the next season it bore forty-seven apples.

Mr. Grimes instanced similar successes, but thought Col. Robertson's theory of moving bearing trees impracticable in Minnesota.

Mr. Smith, of Ramsey, thought the pruning of bruised roots a very important item; he instanced the cutting of roots by a gopher which brought the tree into bearing.

Mr. Bates did not use heavy wax on grafts; did not care for the fibrous roots in transplanting; if you remove the leaves in transplanting it would not kill the tree; and fibrous roots were to one of these trees what the leaves were to the top.

Mr. Brush would mulch in Winter and remove after frosts; favored day's cultivating before setting trees; set about ten feet apart.

Adjourned until 9 o'clock, A. M.

SECOND DAY.

The Society met pursuant to adjournment, the President, R. J. Mendenhall, in the chair.

Moved by Mr. Leland that we proceed to the next subject. Fourth topic—

HOW EXTENSIVELY SHOULD FRUIT BE CULTIVATED, TO RECEIVE THE RECOMMENDATION OF THE SOCIETY?

A few remarks by Mr. Stewart.

Mr. Dart explained the object, as he supposed it to be.

Mr. Elliot read from *Miller's Western Pomological Record*, the rules of the American Pomological Society, in explanation of the topic as he supposed it to be.

Discussion by Messrs. Leland and Stewart upon the record read by Mr. Elliot.

Considerable discussion followed in regard to the rules, when the following Rule No. 1, was amended to read as follows:

That no variety of fruit shall be recommended by the Society for general cultivation until it has been cultivated for at least three years in three different sections or localities of the State.

The other rules presented were referred to the committee on by-laws and the constitution to report at the next annual meeting.

PEAR CULTURE

was then taken up. Col. Robertson had planted dwarf pears worked on the quince—all were killed. He planted sixty standard pears, and they are all doing well. Mulched with swamp hay. Recommended Flemish Beauty. He had seen a Bartlett three miles from St. Paul that was hardy. Pears will do well in this State when grafted on their own roots.

Mr. Hamilton moved that the Society recommend the Flemish Beauty for trial.

Carried.

On motion of Mr. Harkness, it was

Resolved, That the sense of this Society be obtained by taking the vote of the members on the different varieties recommended for culture, in their order as to hardiness, No 1, 2, 3, &c. No. 1, shall be understood to be recommended for general cultivation; No. 2, for favored locations; No. 3, for farther trial.

Carried.

Moved that discussion on varieties of apples be postponed until the afternoon session.

Mr. Leland offered the following resolution, which passed:

Resolved, That this Society recommend the public to be cautious of buying fruit trees from any but well known and reliable persons, preference being shown to Minnesota grown trees.

It was then, on motion of S. Bates, determined that the Society take measures to be represented at the next annual meeting of the State Pomological Society.

STATE UNIVERSITY AND AGRICULTURAL COLLEGE.

Mr. C. M. Loring offered the following resolution, which was unanimously adopted :

Resolved, That a committee of three be appointed by the chair to visit the State University and Agricultural College, for the purpose of gaining information in regard to the Horticultural education of the rising generation of the State, said committee to make a report, and publish the same in the several papers, for the information of the people of the State.

The President announced as such committee, Judge Baker, Chas. Hoag and Truman M. Smith.

Mr. Hoag said he was appointed on a similar committee of the State Agricultural Society, and he wished to nominate the President, Hon. R. J. Mendenhall, in his stead. The Secretary put the motion and it was unanimously adopted.

SMALL FRUITS.

The subject of small fruits was then taken up for consideration, and Mr. C. M. Loring, of Minneapolis, stated that he had a variety of blackberry, which he was cultivating, that was very hardy and quite prolific, from the name of the gentleman who propagated it. It was a seedling of rare merit.

Mr. Truman M. Smith, and all, agreed that sandy soil was the best for this description of fruit.

The same speaker deemed raspberries one of the most important of small fruits, and if properly cultivated would grow to still greater importance. He deemed the Black Cap, the Philadelphia and Clark, Golden Cap, Kirtland, and Brinkle Orange the best kinds. The Kirtland is the best of the blacks. The Golden Cap is the best and most hardy of the yellow varieties.

J. T. Grimes, of Minneapolis, agreed with what Mr. Truman M. Smith said in regard to the different varieties of raspberries.

Mr. Truman M. Smith has cultivated both the Miami and Mammoth Cluster. He had noticed that the roots of the latter were always black, while those of the first were white. He did not protect in any way any of his Black Cap berries. He also spoke of Long's Everbearing in high terms. His practice is to keep his vines well cut down, which has a tendency to make more fruit.

CHERRIES.

The subject of cherries having been taken up, Mr. Truman M. Smith, in reply to a question, stated that he had at different times tried at least fifty varieties of cherries. The Early Richmond or Early May, he said, was the best of all when grafted on the Black Morillo stock. The English Morillo has fruited and done very well, but is not as good as the early Richmond. The Black Tartarian, May Duke, and others of that class are not hardy. And consequently cannot be relied on.

Col. Robertson spoke of a tree from the Hartz Mountains, introduced by Ernest Meyers, of St. Peter. This tree he desired to see introduced generally, as it fruited generally.

Adjourned till 1.30 p. m.

AFTERNOON SESSION.

The Society called to order by the President.

GRAPES.

Truman M. Smith wanted to hear from the Society in regard to grapes.

Mr. Gideon's experience with grapes the last season was disastrous.

Jacob Miller, of Ramsey county, thought that everything depended on planting. The ground should be side trenched. The side hills was the best ground for them. Gravel, he said, was the best. If there is no gravel, fill up the trench with rocks or bones. In Summer they should be cut back, say, the second week in August. Delaware was the best grape to plant. He illustrated his mode of planting grapes. He trimmed the roots every year. Wine raised from grapes in clay soil was never clear. He planted his grapes from six to eight inches deep.

Mr. Smith said that last season was the worst for grapes for several seasons, but he had about two tons. The Delaware was the best grape for general use.

Considerable discussion followed in regard to grape culture, which was participated in by several of the members.

Mr. Grimes offered the following resolution, which was adopted:

Resolved, That the professional and amateur horticulturists of the State be requested to furnish specimens of Minnesota seedling fruit trees and plants to the experimental gardener of the State University, for trial and exhibition.

APPLES.

Mr. Dart offered the following resolution:

Resolved, That three feet is the proper average height at which apple trees should branch in the orchard, and that sixteen feet each way, is the proper distance between trees.

After discussion, the resolution was adopted.

The selection of apples was then recommended, when the Secretary was directed to send circulars to all persons in the State engaged in the cultivation of fruit.

Mr. T. M. Smith moved that the chair appoint a committee of three from the south part of the State to recommend varieties of apples and fruit for general cultivation in that part of the State, and a similar committee from the north part of the State, to report to the Secretary.

Adopted.

The President appointed the following gentlemen as such committee: J. S. Harris, S. Bates, A. C. Hamilton, for the southern part of the State; and for the northern district, Col. Stevens, Wynan Elliot, Lewis Martin.

Col. Robertson asked if there was any way by which the amount of apples raised last season could be ascertained; when it was decided that at least 15,000 bushels were raised.

Committee appointed on wine: Col. Robertson, Mr. Leland and C. M. Loring, who made a favorable report.

On motion of Col. Stevens, it was decided that when the Society adjourns it stand adjourned to meet at Minneapolis, on the 4th of July next.

On motion the President appointed the following gentlemen to write essays on the following subjects:

1st—Preparation of orchard ground before planting, O. F. Brand, of Rice county.

2nd—Varieties of apples, and to what soil adapted, Wyman Elliot, of Hennepin county.

3d—Orchard cultivation, site, and protection and distance to plant, S. Bates, of Winona County.

4th—What constitutes inherent, organic hardiness, and what properties of soil are essential to hardy growth, Col. D. A. Robertson, of Ramsey county.

5th—Timber trees, and how to cultivate, Theodore Bost, of Carver county.

6th—Cultivation of Small Fruits, C. M. Loring, of Minneapolis.

By Mr. Loring:

Resolved, That the thanks of the Society be extended to the North Star Grange of the Patrons of Husbandry, for the free use of this Hall.

Resolved, That the thanks of the Society be, and they are hereby tendered to the Pacific, the Milwaukee, St. Paul and Minneapolis, the St. Paul and Sioux City, and the Winona and St. Peter railroads, for half fare tickets; and that a copy of this resolution be forwarded to the Presidents or Superintendents of each of these roads by the Secretary of the Society.

The Society then requested all persons who are raising fruit in this State, to send their names to the corresponding Secretary at Faribault, Rice county, at as early a day as possible, so that they may receive copies of this report.

The official report will be published in pamphlet form in a few weeks. This report will contain the report of all the proceedings of the Society since its organization.

J. W. HARKNESS.

Secretary.

THE 4TH OF JULY (1869) MEETING AT MINNEAPOLIS.

We have only a brief record of the proceedings of the next meeting of the Society, that of 4th of July at Minneapolis. They were as follows:

GENERAL PROCEEDINGS.

The State Horticultural Society held a preliminary meeting on Monday afternoon at 4 o'clock, at which the principal business transacted was the appointment of committees to arrange the order of business at the following day's session, and to investigate the new injury in apple trees which has developed in the garden of Mr. Wm. M. Harrison, of this city. Messrs. Mendenhall, N. Washburn, and J. S. Shearman, of Illinois, composed the latter committee.

A proposition that individuals joining the Society now be considered mem-

bers until the annual meeting in the autumn of 1871, was found to meet the approval of those present.

The meeting adjourned until Tuesday morning, at 8 o'clock.

MORNING SESSION.

The State Horticultural Society met at the rooms of the Board of Trade, on Tuesday morning. John S. Harris, the President, presiding,

The committee chosen at a former meeting, Messrs. Mendenhall, Washburn, and Shearman, to examine the trees in the garden of Wm. M. Harrison, Esq., which had recently shown a peculiar blight, had attended to their duty, and submitted the result of their investigations.

Mr. Mendenhall remarked, that the insect was a compensating agent of nature, and that often they went to the healthiest tree as well as any other. This blight was a new phenomenon in this quarter, and he felt it was question of great importance.

Mr. Washburn, who submitted the report, said, that the trees of this garden were transplanted into a soil too much enriched; nature had been forced by this method of manuring and dressing so that she revolted at the treatment, and by checking this superabundance of growth had sent this little agent to bore into the new twig at the base, and thus given us to understand that we must study better our soils and the cultivation of fruits. Mr. Washburn presented the veritable bug as found in one of the branches, and Mr. Mendenhall gave the history and habits of the creature as authorized by Harris's Treatise on Insects.

Mr. Shearman, of Illinois, said that it had long been an anxious matter with him in regard to what caused the blight in apple trees which was prevalent in Mr. Harrison's grounds at this time. He had often wanted to lay it at the doors of an insect, but until this morning he had never discovered them. But Mr. Mendenhall's investigations satisfied him.

It was moved by Mr. Charles Hoag, that the committee hold this subject in charge through the season, and at the annual meeting present a full written report of their investigations regarding the nature and habits of this insect.

Adopted.

PREPARATION OF SOILS FOR TREES.

This topic of discussion was enlarged upon by the President and others. Mr. Harris said a difference of opinion prevailed. He thought we should avoid digging a deep hole and filling with rich earth or manure. Ground should be well plowed, and trees planted rather shallow, well mulched and cleanly cultivated—avoid late cultivation or late mulching, which will promote a late growth. Trees are lost the first winter because the wood does not ripen, being pushed so late in the fall. Mr. Mendenhall corroborated the statements and endorsed the views of Mr. Harris.

Adjourned to half-past one P. M.

AFTERNOON SESSION.

After an extended discussion in regard to matters pertaining to horticulture, it was

Resolved. That the Executive Committee be requested to confer with the Executive Committee of the State Agricultural Society, and agree upon some plan by which the Horticultural Society shall have control of the horticultural department of the approaching Fall Fair.

It was determined that the State Society should appoint a committee to visit the different orchards in Minnesota; report the manner in which the trees are cultivated, the variety of soil, the kinds of apples raised, together with all and every information that may be necessary for those who wish to raise apples in the State.

After a full consultation, Col. John H. Stevens, Hon. R. J. Mendenhall, and J. W. Harkness were appointed such committee.

The following is a list of shade and ornamental trees recommended for general planting by the Society:

Evergreens.—Norway Spruce, Scotch, Austrian and White Pines, Arbor Vitæ, Red Cedar.

Deciduous Trees.—Box Elder, White Maple, Mountain Ash, White Birch, White Elm, Butternut.

After the transaction of business of ordinary importance the Society adjourned.

ANNUAL MEETING OF THE SOCIETY, AT WINONA, OCTOBER, 1869.

The Annual meeting of the Minnesota State Horticultural Society was held in this city, last evening. John S. Harris, of Houston county, President, in the chair; and J. W. Harkness, of Faribault, Corresponding Secretary, acting also as Recording Secretary.

Wyman Elliot, of Hennepin county, Treasurer, made a report, which shows that the Society, (financially speaking,) is sound.

After considerable discussion, it was determined, on motion of P. A. Jewell, of Wabasha county, to postpone the election of the officers of the Society until the annual Winter meeting.

DISCUSSION OF FRUIT PROSPECTS IN MINNESOTA.

The Society then took up the question of the probability of the success of the cultivation of apples and other fruit in the State, with a request that Col. John H. Stevens, editor of the *Farmer's Union*, Minneapolis, report the same.

P. A. Jewell, nurseryman, said in substance, that in his travels through Southern Minnesota, last Spring, he had observed with regret that a number of standard trees had been injured by the bark being bursted just above the surface of the ground. He was pleased to observe, however, that the Duchess of Oldenburg and Red Astrachan were free from injuries of this character,

His confidence in the success of the cultivation of the apple was not shaken by these injuries, as last season was an unusual one. At the suggestion of Mr. Secretary Harkness, Mr. Jewell, observed further, that forest trees received the same injury from the early frost, that apple trees did. In this suggestion the Society unanimously endorsed him.

S. Bates, of Winona county, said that he, too, lost some fine trees out of his orchard and nursery last season, by the bark bursting, but noticed where he packed the earth solid around the trees, they received no injury. He expressed great hopes in the future in regard to the fruit prospects of Minnesota. He spoke highly of the Ben Davis apple and other varieties.

Col. D. A. Robertson, Professor of Agriculture in the State University, in reply to a call upon him for information in regard to the success and prospects of apple-growing in the country above Ramsey and Hennepin counties, said that the apple question was settled in that region of the State; that a number of old varieties, including the Duchess of Oldenburg, Fameuse, Plum Cider, Fall Stripe or Saxton, Haas, Sweet Pear and Tetofsky, have proved to be adapted to the climate, requiring there only the like soils and culture that are necessary to success in more southern latitudes. He also named a number of new seedlings of great merit, and that there were several hundreds of new seedlings in the State, out of which a selection should be made and named by the Society, and recommended for trial and propagation. He was satisfied that a number of new and valuable varieties, Summer, Fall and Winter, would thus be demonstrated and made known to the pomological world, which would secure a high rank to Minnesota as an apple-producing State—that in the originating of new varieties of merit, our progress had been most satisfactory, and indeed, wonderful.

After very thorough investigation into the origin of the hardiest and best seedling apple trees of the State, he had ascertained that they were all from the seed of standard varieties of apples of the most northern apple-growing regions of this country—from Maine, New Hampshire, Vermont and Northern New York chiefly, which, he explained, was in accordance with the ascertained results of scientific research into the causes of plant variation, which proved that better new varieties could be produced from seed obtained from distant regions of similar climates. For this purpose, he had procured on behalf of the State University, seeds of the best apples of Russia, for distribution in this State, and production of new seedlings. Col. R. gave the scientific explanation of the cause of the bark splitting off our apple trees—not peculiar to Minnesota—which occurred near the culm of the trees, close to the ground. The cause was the action of alternate extremes of temperature, freezing and thawing, or sudden changes in the Autumn, when freezing weather suddenly followed very warm weather. The sap cells were then full, and from sudden freezing and thawing the partitions between the sap and the air cells were torn, disorganized. This breaking up of tissues produced an effect analogous to the sudden thawing and freezing of the animal organization, causing mortification. Drainage from the surface and wrapping with

paper early in September, before freezing weather, would obviate this bark bursting, as he had proven in his own orchard and observed elsewhere.

Mr. J. S. Shearman, of the Northwestern Nursery, Rockford, Ill., being called upon, said that it was idle to say that the apple would not thrive in Minnesota. Those on exhibition to-day at the State Fair—the product of this State, were the finest specimens of the different varieties on exhibition he ever saw. In regard to the bark bursting near the surface, it was a common event all through the West. He had observed it not only in Illinois, but in Wisconsin and Iowa, as well as in Minnesota. Of course this was confined to unusual Winters.

D. W. Humphrey, of Rice county, thought that the apple question was pretty well settled in this State, but he wanted to say, that in addition to the different varieties recommended by the Society, he found around Faribault that the Saxton or Fall Stripe, was doing very well.

Mr. Secretary Harkness, of Faribault, called the attention of the Society to the importance of a remark made by Mr. Jewell about top-working; or, in other words, the grafting or budding of the semi-hardy varieties on those of the hardy kinds. After a very free discussion, this project was endorsed by every member of the Society.

Hon. Chas. Hoag, of Hennepin county, had visited every school district in that county, and it afforded him much pleasure to bear testimony to the bright prospects of the raising of apples in that section of the State. He saw several orchards that were full of choice fruit.

The President being called upon, gave a flattering account of the fruit prospects in his neighborhood, and especially in his own grounds. In answer to a question by Col. Robertson, he said that he knew of several Flemish Beauty Pears, and other varieties that were bearing, and appeared hardy. He had no doubt of the ultimate success of the pear in the State. He had lost last Winter a few apple trees, but that was common in all latitudes. He enjoined upon all the necessity of pruning trees—if at all—in June. In reference to winter killing, he was satisfied the injury was done in October. He had a hickory tree killed in his garden, last Winter, from the same cause. He thought pear trees should be set over a trench filled with small stones, which should be properly drained. New seedlings were of great moment. He continued his remarks in an interesting manner.

It was then voted that the President should collect and send samples of Southern Minnesota apples to the American Institute, New York.

Also, a committee consisting of Col. D. A. Robertson, of the State University, and Col. John H. Stevens, of Minneapolis, to collect samples in Northern Minnesota, and dispose of them in the same way.

The Society then adjourned to meet in Faribault early in January next.

THE ANNUAL MEETING AT FARIBAULT, JANUARY, 1871.

The convention assembled at Fireman's Hall, in Faribault, at 2 P. M. The

President, J. S. Harris, of La Crescent, called the convention to order. In the absence of the Recording Secretary, A. W. McKinstry, of Faribault, was elected Secretary *pro tem*.

The minutes of the last meeting were read and approved.

On motion, the President's Annual Address was made the special order for Wednesday, at 2 P. M.

MEMBERS 1870-71.

E. S. Riddle, Minneapolis.	Saml. Bartow, Faribault.
Col. John H. Stevens, Minneapolis.	G. W. Clark, "
D. M. Barwell, "	R. A. Mott, "
James Hoffman, "	J. W. Harkness, "
Gilbert H. Howe, "	C. E. Andrews, "
N. Washburn, "	A. W. McKinstry, "
Wyman Elliot, "	Levi Nutting, "
P. A. Jewell, Lake City.	Chas. D. McKellip, "
E. H. S. Dart, Owatonna.	A. Beebee, "
M. W. Leland, Rochester.	D. F. Kelly, "
E. B. Jordan, "	C. P. Cook, Garden City.
T. B. Farzy, "	Silas Kenworthy, "
M. C. Barnell, Money Creek, Houston Co.	W. E. Brimhall, St. Paul.
John S. Harris, La Crescent, " "	Truman M. Smith, "
O. F. Brand, Faribault.	

Mr. Leland, from the committee appointed to prepare a new constitution and by-laws, submitted a report. The report was accepted.

It was moved that the constitution be taken up and acted upon article by article.

Carried.

The articles were adopted separately after several amendments. The question coming up upon the constitution and by-laws, as amended, on motion, the subject was laid upon the table.

Mr. Brand moved that the chair appoint a committee of three to report topics for discussion.

Carried.

O. F. Brand, P. A. Jewell and Wyman Elliot were appointed such committee.

On motion, the Treasurer proceeded to collect the annual dues.

Adjourned to 7 P. M.

EVENING SESSION.

The convention was called to order by the President. The Secretary read a communication from D. Wilmot Scott, Secretary of the Northern Illinois Horticultural Society.

The committee on topics for discussion made a report. The report was accepted.

The report of the committee on the constitution was taken up and debated. Mr. Jewell moved to lay the report on the table for future consideration.

Carried.

On motion, convention proceeded to the discussion of the topics presented by the committee on order of business.

The first was read by the Secretary, viz.: 'The expediency of electing a delegate to attend the next annual meeting of the American Pomological Society.

Mr. Leland moved that the Society elect a delegate to attend such Convention.

Carried.

On balloting for such delegate, P. A. Jewell, of Rochester, having received all but two of the votes cast, was, on motion, declared unanimously elected.

Mr. Jewell declared his willingness to go, as the Society wished, and hoped every member of the Convention would aid in furthering the object of his mission, by sending to him specimens of the finest apples and other fruits the State produced.

Mr. Cook moved the appointment of a committee of three by the chair, to solicit an appropriation from the Legislature to further the objects of the Society.

Adopted.

The chairman appointed Col. J. H. Stevens, Wyman Elliot and Truman M. Smith.

The "second topic" was announced, viz.:

THE EXPEDIENCY OF SECURING A REPORT CONCERNING ALL THE ORCHARDS OF
THE STATE.

Mr. Mott moved the appointment of a committee of three, to visit the orchards of the State, in accordance with the proposition.

Mr. Harkness moved to amend the language of the proposition by adding the words, "as far as practicable."

Carried.

Mr. Leland moved as a further amendment, that two more be added to the committee.

Adopted, and the resolution as amended was then carried.

The President appointed as the committee, Wyman Elliot, of Minneapolis, A. C. Hamilton, of Winona, P. C. Cook, of Blue Earth, O. F. Brand and J. W. Harkness, of Faribault.

Mr. Jewell announced the presence of Mr. Chas. Waters, an experienced nurseryman of Western Wisconsin, and moved his election as an honorary member.

Adopted.

Adjourned to 8, Wednesday morning.

WEDNESDAY MORNING.

Convention was called to order by the President.

The minutes of Tuesday's proceedings were read by the Secretary, corrected and approved.

Mr. Mott, in behalf of the Directors and Superintendent of the Asylum for the Deaf and Dumb, and the Blind, presented an invitation for the members of the convention to visit that institution.

On motion, the Society resolved to accept the invitation for Thursday forenoon, at half-past ten o'clock, precisely.

Mr. Mott suggested the printing of certificates of life membership. He would like to become a life member but was waiting for the Society to issue suitable certificates.

Col. Stevens suggested that it would be better to have them lithographed.

Mr. Dart moved that the matter be referred to a committee of three. The chair appointed Mr. Dart, A. W. McKinstry and Col. Stevens.

The hour having arrived for the reading of essays, one was read by O. F. Brand, entitled "A Fundamental Principle for the Minnesota Horticulturalist."

Col. Stevens moved that the essay be printed.

Carried.

On motion of Mr. Harkness, the other members designated to prepare essays, who had not done so, were requested to prepare them and hand to the committee on publication.

The convention proceeded to the discussion of the 4th topic viz :

THE BEST PLANT TO BE USED FOR HEDGING PURPOSES, AND METHOD OF CULTIVATION.

The chair announced that the question would be divided, the subject of varieties being first discussed.

Mr. Brand presented a communication in favor of the barberry written by Mr. H. Thacher, of Oneida Community, which was read.

Mr. Mott related his experience with osage orange. Had set a hedge four years ago, and did not think he had lost a plant. Had covered with loose straw the first winter.

Mr. James Hoffman had tried almost every thing, and had failed; but believed that cottonwood would make a good hedge. Could have a hedge in four years from the time of setting.

Mr. Jordan had no faith in the osage orange, and gave his experience with the white willow. Had put out cuttings four years ago and now had a good fence.

Mr. Leland approved the willow. If set two feet apart they will produce large timber. If set eight inches apart nothing will get through. They will grow twenty feet high in two years if let alone.

Mr. Harkness preferred willow next to barberry. Thought the principal objection to them to consist in their taking up too much room. Considered cottonwood a nuisance.

Mr. Mott said the plum had been mentioned. Dr. Jewett had planted the wild plum, but it became such a nursery of worms that he had to cut it down. He would suggest the prickly ash.

Mr. Kenworthy said the ash was very thorny; the willows, except the river willow, would seed everywhere within twenty rods. were a nuisance.

Mr. Dart favored the white willow; thought the barberry would not turn beasts.

Mr. Hoffman's statements respecting willows seeding agreed with Mr. Kenworthy's.

Mr. Jewell said both cottonwood and willow might turn cattle in a few years, but they impoverish the soil; would spoil half the crop within range of their roots; besides, they grow too high for a hedge. The barberry is perfectly hardy; had seen bushes fifteen to twenty years old; had no doubt of its affording protection against cattle; thought Mr. Mott's test of the osage orange not a fair one, as his hedge might have been protected by snow.

Mr. Jewell opposed cottonwood on account of its sowing its seed broadcast.

Mr. Harkness offered the following resolution:

Resolved, That we recommend for trial of hedges—1st, the barberry; 2nd, the white or grey willow; 3rd, lombardy poplar; 4th, wild plums; 5th, seedlings of the cultivated crabs.

Mr. Dart offered an amendment to put willow first in the list.

Mr. Waters strongly favored the barberry. Considered it useless to grow a hedge of any plant that could not be clipped to keep it in bounds.

Amendment lost.

Mr. Howe offered an amendment, to add the crab to the list as fifth in order, and spoke highly in its favor for hardiness and beauty.

Mr. Dart moved to lay the motion on the table.

Carried.

Mr. Harkness offered a resolution to recommend for trial, first, the barberry; second, the white willow.

The question was divided, and taken first upon the barberry, which was decided in the affirmative.

The question was then submitted upon the white willow, and lost.

On motion of Mr. Harkness, the fifth and sixth topics were made the special order immediately after the President's Address, in the afternoon.

Mr. Harkness moved that the President appoint a committee of three, to change the form for the submission of those topics.

Carried.

Chair appointed Messrs. Stevens, Harkness and Howe.

The chair offered the following resolution:

Resolved, That in the opinion of this Society, the nursery and orchard trees in this State are in good condition for wintering safely, up to the present time.

The question was discussed by Messrs. Jordan, Mott, Brand, Jewell, Hoffman, Harkness, and the President.

Mr. Elliot submitted as a substitute for the resolution, the following:

Resolved, That in the opinion of this Society, the nursery and orchard trees of the State are in good condition for wintering up to the present time, where properly mulched, and that in consequence of a lack of a sufficient quantity of snow, we recommend to all who have not mulched their trees to do so immediately, to prevent root-killing.

The resolution was adopted.

Convention adjourned to 2 o'clock P. M.

WEDNESDAY AFTERNOON.

The convention was called to order by the President, who proceeded to deliver the Annual Address.

ADDRESS OF PRESIDENT HARRIS.

Gentlemen of the Minnesota Horticultural Society:

Although I am an enthusiastic lover of horticulture, I feel my incompetency to deliver an address suited to this occasion. I would like to give you a history of the progress the art of horticulture has made since the first currant bush and geranium slip were brought into the State, on the rear end of an emigrant wagon, down to the present date; but it would require the labor of months to gather the statistics to enable me to do so with any degree of accuracy, although it extends over but a few years of time. It is scarce twenty years since the whole of our State was a wilderness—the home of the wild Indian. Where beautiful and stately mansions now stand, scarce a decade of years since the blue smoke curled upward from the rude wigwam, and where then the buffalo and deer found ample and undisturbed pasturage, we may now behold broad fields, stretching away until lost in the distance, that in summer are covered with golden grain, furnishing the staff of life to millions of human beings. Thriving villages are springing up all over the State, and its resources are being developed as by magic.

Previous to 1865, the fruits of the State were chiefly wild crabs, wild plums, wild grapes, strawberries, blueberries and cranberries, and many of these were found only in certain localities of limited extent. A great many trees of apple, plum and cherry, had been planted previously, but they met with such speedy and certain death during the following Winters, that it came to be believed by about ninety-nine out of every hundred that it was useless to attempt to raise fruit in such a cold country. The farmers settled back upon this opinion, and claimed that our natural fruits must suffice them until they could make a little with which to locate in some better country.

A majority of our citizens have lived in the Eastern States, and been accustomed to an unstinted supply of apples, peaches, pears, plums, cherries, &c., and to be deprived of them and to have no hope of ever seeing or using them more, takes all the poetry out of their lives. How many a poor wife is almost broken-hearted, and weeps bitter tears when memory compels her to contrast her present lot with the past, the days and the home of her girlhood; and she would almost exchange every hope of her life for one day's ramble in the orchard and garden of the old home, that she might feast her eyes upon the rosy-cheeked apples, golden peaches, and luscious, melting pears, and regale her senses with the fragrance of the little flower-bed in the garden; and she cries—"Alas, alas, will it always be so?" No, my friend, it will not always be so. I perceive that I am digressing from my subject, and I will again return to it.

This cry against the raising of apples was at its height in the years 1865 and '66. About this time Col. Robertson, of St. Paul, entered upon the work

of collecting the experiences of those who had attempted to raise fruit, with the view of digesting and sifting it to see if there was not a ray of hope that by some process of culture a few varieties might be found that would endure our climate and produce fruit. This work resulted in stimulating a few persons, who had never given up to the popular opinion, to make a more thorough trial and a final settlement of the question. Soon after this, and while it was yet believed throughout the whole country that apples could not be raised in Minnesota, this Society was organized, and scarce a dozen men could be found in the State, that would enter into this horticultural organization, because they had no faith that it would result in a success. Nearly all the fruit on exhibition at the State Fair being held at that time was raised in my orchard; but I was a stranger to every horticulturist in the State, and hailed from a locality unknown to the majority of the people in attendance at the Fair. But meagre as the display was, and unknown as was the exhibitor, it created a sensation which resulted in the organization of this Society, and the dawn of a new era in fruit culture, and although but little over five years have transpired, the majority of the people now believe in the ultimate success of the apple. The ball is rolling on. The exhibition of fruits is beginning to be a leading feature at our fairs, and thousands of trees are being planted now where dozens were then.

The people all over the State are awakening to the importance of planting trees, and now the opportunity occurs for us to exercise an influence for good. It devolves upon us to ascertain the causes of the many failures that still occur, and the way by which they may be avoided.

Some action should be taken at this meeting in reference to new Minnesota Seedlings. I am inclined to believe that we may hope for much from this source, if we adopt measures to thoroughly test the many varieties now growing in the State. I recommend only such to be propagated and sold, as were hardy, productive, and reasonably good. This would enable the people to purchase intelligently, and could not possibly be any disadvantage to the nursery men. And for the greater protection of the people, all agents representing nurseries in other States should be required to have a certificate from the proprietor of such nursery showing that they are authorized agents, which should be endorsed by the President or some member of the executive committee of this Society. I have other suggestions to make having a direct bearing upon the usefulness and prosperity of the Society, but they will come in more naturally at the close of my remarks, and I will pass on to notice another department of our work.

Up to the present time, we have scarcely entered upon the field that lies open before us, the apple question being considered so momentous, that it has occupied the greater part of our attention; but there are other fruits but little behind that in importance, which ought to be grown by every farmer—yes, by every household in the State. It devolves upon this Society to array them before the public, and point out the best varieties, and instruct in the best methods of propagation, cultivation and protection.

Ignorance in the scientific part of horticulture, is one of the most prolific

causes of failure. No doubt the majority of the people are excusable for this ignorance, for they have been their own schoolmasters; but if this Society will collect, digest and disseminate the information that can be derived from the experience of the best and most successful fruit-growers and encourage experiments, this darkness will begin to lift, and the quantity, quality and variety of the fruits grown and consumed will continue to increase very rapidly. When the *modus operandi* is understood, I believe that Minnesota will produce pears that will rival those of California in size and beauty and excel them in quality, and at an early date they should be discussed in our meetings.

Grapes are already coming into favor with the people, and no better grapes can be shown east of the Rocky Mountains than were produced in this State last season. There are but few varieties worthy of cultivating; and we should notice the best, that the people may know which to plant, and save themselves the vexation of waiting for grapes, and lo! they have nothing but wild grapes.

Strawberries and raspberries are perfectly at home in our climate, and so easily grown, that there is no excuse for being without them, and the currant will yield its fruit for every one who will take the trouble to plant the bushes. Still this Society may do much to improve and encourage the cultivation of all of them. Thus far the tame plum, (*Prunus Domestica*) has succeeded but very indifferently, and in most localities it is money thrown away to plant them extensively. But we have native plums but little inferior to the best of them, and if they were looked up and brought into cultivation, they would very likely improve and be good enough. It is claimed by the best botanists that the Sloe, (*P. Spinosa*) is the original parent of the tame plum. If such large and delicious fruit as the Washington and Blecker Gages have been derived from so humble a parentage, what may we not expect from our own (*P. Americana*). I fancy our children may yet produce the fruit as large as goose eggs, and better than the gages.

There are many other varieties of fruit that are worthy of your notice, but I will pass them by for the present, and call your attention to the flowers, the loveliest of all God's gifts to fallen man. The love of them is almost universal. It seems to be a principal of the human soul to love the good and the beautiful. This love manifests in the child at a very early age, and ought to be encouraged and cultivated. It is in the power of man to make his home a Paradise but little below that garden "in the eastward of Eden" where the Beneficent placed our first parents before the earth was cursed for their disobedience, and made to bring forth "thorns and thistles." What is so attractive to the traveler as that modest, unpretending cottage, where the ivy, the woodbine, and the honeysuckle twine about the piazzas like pleasing memories about the good man's life; and the rose, the queen of flowers, stands sentry upon the neatly kept lawn, and the pinks, verbenas and violets trail or peep out along the walks, regaling each passer-by with their soul reviving fragrance? In the back-ground stands the well trained orchard, groaning beneath its load of fruit. There are no briars or thistles crowding the fence corners. No rubbish

piled in the street. No weeds upon the lawn. Good books lie upon the table within, and pictures hang upon the walls. Without there is an air of comfort, within, peace, virtue and love. The owner has the respect of his fellow men, and good angels hover about and keep his loved ones. He that is so poor, or lives in a clime so ungenial that he cannot have such surroundings, merits our pity and our prayers. Such a home exalts the mind of its possessor, reveals to him that he possesses a soul, and lifts him up towards the great God who gives the fruits, and makes the flowers so beautiful that "Solomon in all his glory was not arrayed like one of these."

It is the mission of this Society to encourage floriculture, and home adornment, by bringing such influences to bear upon it as shall arouse and set into action this love. It may be nearly crushed out of the majority of the householders of this age; in some by greed of gain; in others by the hardships and perils of pioneer life, but it never entirely dies; but if it did, we might teach their sons to raise fruits and their daughters to cultivate flowers, which would give them present gratification, and lead them onward and upward to future happiness, and let the world and "old folks" know that wheat and pork are not all that give enjoyment in this life. To further this end I hope our Society will hold Floral exhibitions and award premiums, not so much to remunerate the professional gardener, as to encourage the sons and daughters of the farmer and mechanic.

I am not satisfied with what I have said on this subject. Had I the talents of a Clay or Webster, or had I the eloquence of a Patrick Henry, could I speak with the tongue of fire and paint in pictures of gold, I would exhaust them all in trying to persuade my fellow Minnesotians to beautify their homes. Never, never, can I forget the expression of joy that I have seen light up the eyes of the toil-worn, almost broken-hearted wives of farmers, at the sight of a rose-bud, or geranium leaf; and then what sadness came over them when the husband was asked to purchase a little plant for them, and replied "what they wanted with such trash?" I would be most happy if I could influence their husbands and sons to raise a few flowers, or at least furnish them for their wives or sisters to cultivate. I do not hope to transform our whole State in one generation. There are men whom we cannot reach by any direct means. They do not subscribe for any agricultural or horticultural papers, or read any books on those subjects. They cannot see any beauty in the row of shade trees along the roadside, or any utility in the flower-bed, and think the door-yard is the finest kind of a place for pasturing their calves. They know just what their fathers did and no more. They will not become members of this Society because they do not see the dollar's worth in it, and will never have any fruit, except what they purchase or is given to them; and there will be such a dreary, repelling air about their bleak homesteads that their children will desert them and leave them to spend their declining years alone, because there is no memory of pleasant associations and happy days clustering about the old home.

I will now conclude with a few suggestions: First, we should secure a hall or room in some town that is easy of access, and commence making a collec-

tion of horticultural books, papers, magazines, &c. We should adopt measures to secure the annual reports of all the State Societies in the union. We should gather one or more specimens of every variety of fruit that originates in the State, to be preserved in wax or by colored plates, accompanied with the name, place of origin, history and name of originator. We should also get up a museum of Ornithological and Entomological specimens, accompanied with the history of the habits of each individual specimen. Such a museum would prove an interesting feature in our future exhibitions. To secure this, we must have money, and I recommend that we memorialize the present Legislature to appropriate for our use \$1,000 per year. This is certainly a very moderate sum to ask for, when we consider the vast amount that would be saved to the State if we can raise our own fruit.

I would recommend for your consideration the establishment of one or more specimen orchards in the State, in which every new variety of fruits can be tested before they are offered for sale, and where a system of experiments could be carried on in the way of originating new varieties by the artificial hybridizing of the seeds. I am aware that this is a tedious and uncertain work, but we may reasonably expect more from it than if we trust it to the wind and bees.

I think it would be of great benefit to this Society and the State at large, to be represented at the next meeting of the American Pomological Society, and therefore, I suggest that before we adjourn this annual meeting we appoint a delegate who will represent us, and make an exhibit of our fruits, and ask the State to defray the expense.

I notice that the practice of warranting trees to live is becoming very prevalent among nurserymen. I think this practice is very unwise and a disadvantage to the honest purchaser. It gives the tree peddler who hails from unknown parts and never expects to sell in the same locality the second time, an advantage over the honest nurseryman who is striving to build up and maintain his reputation by selling only hardy and perfect stock, because this peddler's trash can be furnished for less than half of the cost of raising and marketing such trees as are wanted in this State; consequently, the nurseryman is compelled to raise cheaper stock, and the purchaser is tempted to neglect giving the proper care in planting and cultivation because he expects to get a new tree next year for every one that dies. I know of one man who has his row of dead trees, keeping them as carefully as others do the living, and will not purchase any more because he expects the agent to come around and give him some live ones. I think those dry branches will bud, blossom, and bring forth fruit, long before that agent comes back and makes the warrant good; else, if the nurseryman is compelled to make good the losses of the careless planter, he must make up for the loss by charging a higher price to the careful, which, to say the least, is unjust. I do not know that we can take any direct action upon this, but it is worthy of our notice.

Gentlemen: We have accomplished something. Let us continue untiring in our work, until every home becomes a second Eden; until our beautiful prairies become dotted over with orchards, gardens, and groves of deciduous

and evergreen trees, and the beautiful landscapes that border the Father of Waters are crowned with residences that rival those upon the Hudson.

I now retire from presiding over your meetings, wishing we may enjoy many such in the future, and that in all our meetings there may be no envy, no jealousy, and that all of our discussions may be profitable to ourselves and useful to others; that all members may have a desire to receive and a willingness to impart information: and if at any time any member is more successful than we in the pursuit of horticulture, let us rejoice with him and learn of him.

On motion of Col. Stevens, the thanks of the Society were tendered to President Harris, for his very able and instructive address, and it was requested for publication.

Mr. Harkness from the committee on topics, reported as follows concerning fruit trees:

Your committee would recommend that each variety in the list be taken up separately, and its merits discussed, and that the vote be taken either to recommend for general cultivation, or for trial, or to strike it from the list.

The report was accepted.

Mr. Dart moved that no member speak more than two minutes, and but once upon any one variety.

Adopted.

The several varieties were then taken up and adopted without opposition, with the following exceptions:

Mr. Jewell moved to pass over the ash-leaved maple or box-elder, as an ornamental tree.

Lost.

Gen. Nutting said it was a good sugar producing tree, and grew extensively near Fort Abercrombie. Had seen it two or three feet in diameter.

Mr. Jewell said it had been decided as not profitable as a sugar producing tree in Illinois.

Mr. Harkness said it was highly recommended for that purpose by the Illinois Horticultural Society.

It was placed on the list.

Mr. Harkness moved to strike out the lombardy poplar.

Carried.

A motion was made to strike out the chestnut. Messrs. Nutting, Stevens, and Jewell, mentioned that the tree had proved a success in various places, though they had killed back for the first one or two years. Mr. Elliot had failed both with the young trees and the seed.

Motion to strike out was carried.

Motion made to strike white oak from the list. Tree defended by Mott, Howe and Harkness.

Lost.

Mr. Harkness inquired about American larch. It had not made half the growth of the European with him. Thought it would not succeed on high and dry land.

Mr. Elliot had pulled trees out of the swamp and planted them on dry sandy prairie with success. Some were now five inches through.

Mr. Jewell favored the European larch. It was a fast grower and would last as long as the red cedar, while the American would not last as long as the white cedar.

Motion to adopt the American larch was lost, and convention voted to strike it from the list.

On the suggestion of members, other trees were added to the list, which, as finally adopted for general cultivation, stands as follows:

European larch, blue and white ash; cottonwood, soft maple, ash-leaved maple, black walnut, white or rock elm, sugar maple, Scotch pine, white pine, butternut, white oak, red oak, American spruce, Norway spruce, basswood or linden.

On motion the same committee was directed to report a list of ornamental trees, for general cultivation.

The committee submitted a list which was read by the Secretary.

A motion was made to strike soft maple from the list. Mr. Harkness thought it a good tree. The frequent splitting of the limbs arose from the practice of cutting off the natural top in transplanting, leaving only a pole. Gen. Nutting did not believe a healthy tree of a foot through could be found in the woods or out of it. The bark became diseased. Hr. Hoffman thought the trouble might arise from the common practice of bending trees down, or twisting them to get them out of the ground when taken up. Mr. Dart thought the greatest objection was its liability to be affected by borers.

The motion to strike out was lost.

Black cherry, and balm of Gilead, were stricken off.

Mr. Bird moved to add the buckeye or horse chestnut to the list.

Lost.

The list was adopted, complete, as follows:

Norway spruce, Scotch pine, European larch, Siberian arbor vitæ, hackberry, dwarf pine, ash-leaved maple, American hop-tree or ironwood, balsam fir, American Spruce, American Strawberry-tree or wahoo, soft maple, rock elm, mountain ash, black cherry, black walnut, sugar maple, Austrian pine, butternut, white birch, high bush cranberry, red cedar, Kentucky coffee tree.

On motion of Mr. Jewell, the Eighth topic was made the special order for the evening.

Mr. Harkness moved the appointment of a committee of three to nominate standing committees, and designate subjects for their consideration.

Adopted.

The President appointed L. Nutting, J. W. Harkness and P. A. Jewell.

WEDNESDAY EVENING, JANUARY 18.

Convention called to order by the President.

The Treasurer's Report was read and adopted. The balance in the treasury was \$64.17.

Mr. Dart offered the following resolution :

Resolved. That no variety of fruit should be offered for cultivation by this Society until its value is fully known, and the stock is sufficiently increased so that the demand can be supplied at reasonable rates.

After considerable discussion, was laid on the table.

The report of the committee on topics for standing committees not being ready to report, the Convention proceeded to discuss the Eighth topic :

THE VALUE OF THE DIFFERENT VARIETIES OF APPLES, PEARS, CHERRIES, PLUMS
AND PRUNES—THEIR HARDINESS, PRODUCTIVENESS, QUALITY AND SEASON.

Col. Stevens inquired if the Winona Chief, Nonpareil, Lucy and Utter's Red, were not the same variety?

Mr. Jewell had seen and examined the trees and fruit and believed them to be identical. Other members were of the same opinion.

Mr. Harkness presented a list of apples, and the Convention proceeded to discuss the different varieties separately.

The Haas was first taken up.

Col. Stevens said it is becoming much cultivated. It is very hardy, as much so as the Duchess of Oldenburg. Does well as far north as Anoka, all through the Big Woods, and in fact in most parts of the State, and upon all kinds of soil.

Mr. Waters, of Wisconsin, stated that the fruit was originated, or at least was first brought to notice in 1804, on the present site of St. Louis. Forty years afterwards, the tree was living, and bore 30 barrels of fruit in one season, which would prove it a long liver, and its productiveness. Trees are very thrifty. Have always proved hardy in Wisconsin.

Mr. Jordan thought it not so hardy as Duchess of Oldenburg; tips sometimes freeze, but never injures the tree. He mentioned instances of orchards dying out, the Haas alone remaining sound and healthy. No tree in Minnesota has given better satisfaction. It should head the list; is of red color, good size, and No. 1 flavor.

Mr. Hoffman said it is a very rapid grower and very thrifty, more so than the Duchess of Oldenburg; had seen many fine specimens in different parts of the State.

Mr. Waters had trees bear in four years from the graft. Fruit is rather tart. Thought it would keep till December.

Mr. Jewell had known the fruit to keep till March when picked early.

Mr. Humphrey said it would keep till May. Mr. Hoffman has trees three and four years old full of blow buds.

A motion to place on list and recommend for general cultivation carried unanimously.

Duchess of Oldenburg.—On motion, it was placed upon the list and recommended for general cultivation.

Tetofsky.—Mr. Leland calls it a first-class apple. Season from 1st to 15th of August; size about as large as the Haas. Tree rather a slow grower.

Mr. Jewell thought it not so large as the Haas, about the size of the Golden Russet.

Mr. Jewell said it should be carefully treated. Many poor trees had been sold, hence the failure to do well in many cases.

Mr. Elliot had bought some poor specimens three years ago. They are good trees now. Must be hardy or they would have been dead.

Mr. Dart thinks cutting off the top injures the tree; thinks it is as hardy as any tree on the list; grows slowly first year, more rapidly afterwards. Bears at 4 to 6 years old, would make a good dwarf; has seen nine large apples on a tree eighteen inches high. Mr. Dart describes the tree as stocky and straight; limbs curve upwards, bark is of reddish color, especially during latter part of Winter and in Spring. Foliage unusually large.

Motion to adopt for general cultivation, carried unanimously.

Fameuse.—Mr. Jewell thought it a good variety; would not do so well on sandy soil. On clay soil, near to water, or protected by bluffs or timber, it is a first class tree; would recommend it for favorable localities.

Motion to place it on the list for only the most favorable localities, was carried unanimously.

Perry Russet.—On motion it was recommended for favorable localities; as also *Red Astrachan*, on same conditions.

Ben Davis.—Mr. Jewell thought it would do well; has not been tried sufficiently to recommend for general cultivation. On motion, it was recommended as well worthy of further trial.

Golden Russet.—After some discussion it was recommended for favorable localities.

Autumn or Early Strawberry.—(It was decided that the Autumn and Early strawberry are different varieties.) Mr. Dart regarded the Autumn as hardy as others on the list for favorable localities.

Mr. Humphrey considered it as hardy as *Fameuse* or *Perry Russet*.

Motion to place on list for trial was carried—three dissenting votes.

Saxton or Fall Stripe.—Mr. Humphrey considered it as hardy as the *Duchess of Oldenburg*; is a good apple and very productive.

Mr. Jewell said the *Saxton* is hardy, but not sufficiently so for all situations.

Mr. Brand has been watching the *Saxton* for three years; thinks it will succeed where the *Duchess of Oldenburg* will.

On motion, it was recommended for favorable locations with two dissenting votes.

Motion to recommend the remainder of the list for good locations—the remainder of the list comprising the following varieties:

Tallman Sweet, Plumb's Cider, Sops of Wine, St. Lawrence, Price's Sweet, Alexander, Seek-no-further, Rambo, Fall Orange and Wine Sap.

The list was discussed at some length, and the *Sops of Wine*, *Seek-no-further*, *Rambo* and *Wine Sap* struck from the list.

In answer to inquiry it was stated that the *Sops of Wine* and *Early Washington* are the same variety.

Convention adjourned to 8,30 to-morrow morning.

THURSDAY MORNING.

The convention assembled pursuant to adjournment, the President in the chair. The minutes of the preceding meeting were read and approved.

Wyman Elliot introduced the following:

Resolved, That we recommend a more general adoption of small fruits and flowers among the farmers of the State, and that, in our opinion, it will be the means of inducing the most of our boys and girls to stay at home and help develop and adorn the homes of their fathers and mothers, who after the hardships and perils of pioneer life, need quiet and repose.

Resolution adopted.

A resolution introduced by Mr. Elliot was also passed, enjoining upon members the duty of collecting varieties of apples.

Mr. Leland moved that the Society recommend to every one to buy of home nurseries exclusively.

The resolution was opposed by Mott, Jewell and others.

Mr. Jewell moved that it be tabled.

Carried.

The subject of apples was called up.

Mr. Jewell moved to place the Phoenix upon the list for trial in favored localities.

Adopted.

Mr. Jewell presented a handsome seedling apple originating with him, and requested Mr. Mott to name it. It was named the "Bonnie Lassie."

Mr. Jewell moved the recommendation of Utter's Large Red for cultivation in favored localities.

Mr. Leland recommended the Lucy.

Mr. Jewell thought it identical with Utter's Large Red, Winona apple, Cooper's and Winona Chief.

Mr. Jordan said the Utter's Red had been sold about Rochester, and in every instance had proved a failure.

Mr. Waters had been disappointed in it. Thought it would do in but few localities.

Mr. Dart thought it an abundant bearer, but could not be safely recommended for Minnesota.

Mr. Jewell's motion was adopted.

The hour having arrived for visiting the Asylum, the Convention adjourned to half past 1 P. M.

THURSDAY AFTERNOON.

Convention called to order at the hour of meeting, by the President.

On motion, proceeded to election of officers.

R. J. Mendenhall, of Minneapolis, E. H. S. Dart, of Owatonna, and M. W. Leland, of Blue Earth, were nominated for President.

Mr. Mendenhall having received all the votes but four, was, on motion, declared unanimously elected.

The following officers were also unanimously elected :

1st Vice President—E. H. S. Dart, of Owatonna.

2d Vice President—M. W. Leland, of Blue Earth.

Corresponding Secretary—J. W. Harkness, of Faribault.

Recording Secretary—A. W. McKinstry, of Faribault.

Assistant Secretary—C. D. McKellip, of Faribault.

Treasurer—Wyman Elliot, of Minneapolis.

Mr. Mott moved that the officers elect constitute an executive committee, and have the general interests of the Society in their charge.

Carried.

President Harris, on resigning the chair, made a few well chosen remarks, expressive of the good will manifested toward him by the Society during his Presidency, and his hearty wishes for its prosperity.

In the absence of the newly elected President, the 1st Vice President, Mr. Dart, assumed the chair.

Mr. Jewell moved that the thanks of the Society be tendered to the late President for the able and efficient manner in which he had discharged the duties of his office. Unanimously adopted.

Mr. Jewell moved a vote of thanks to the officers and teachers of the Institute for the Deaf and Dumb, and the Blind, for the courtesy extended to them in the invitation to visit the Institution and their treatment while there. He accompanied it with some remarks eulogistic of the objects of the Institution, and setting forth its claims upon the public. Unanimously adopted.

Col. Stevens offered the following resolution :

Resolved, That the State Horticultural Society, in convention assembled, do hereby tender our best thanks to the people of Faribault, for the warm manner in which they have extended the hospitalities of their beautiful and enterprising city to the members of this convention, assuring them that we feel grateful for these attentions.

Unanimously adopted.

SMALL FRUITS.

On motion of Mr. Leland the convention proceeded to the discussion of small fruits.

Mr. Nutting moved that each member be allowed to take up such variety of small fruits as he chose, and speak upon it ten minutes. Passed with an amendment limiting the time to five minutes.

Mr. Howe moved to recommend the Early Richmond Cherry for general trial.

Mr. Cook moved to amend by substituting general culture.

Mr. Leland's experience was that it was vain to attempt to cultivate tame cherries.

Mr. Cook knew it to be perfectly hardy, and a good bearer.

Mr. Nutting had had two trees. One was killed the other grew six or seven feet high, but never bore a cherry and had sprouted all over his yard.

Mr. Jewell said the tree was probably not Early Richmond as that never

sprouted unless budded on some other stock. Believed the tree only adapted for favorable locations. Would amend that it be recommended for favorable locations.

Mr. Harkness thought it hardy when propagated on Murillo stocks.

Mr. Jewell's amendment was lost, and the original motion carried.

Mr. Harris moved to recommend the Concord Grape for general cultivation. He thought of all the grapes it was best adapted for general introduction. There were better grapes; he could make more money from the Delaware or Iowa, but they required a care in cultivation that the great majority of farmers would not give; recommend the Delaware to every person who is willing to take the proper care of it; it is a slow grower, and is from four to six years in coming into bearing. Gave his system of training as follows: Would buy one year old No. 1 vines in the Fall; prune back to three or four buds; cut roots back one half, and plant in Spring 8 by 8 feet apart, and deeper than they grow in the nursery. After the vine commences growing, fill up around it until the top bud is just above the ground; prune-down in November to three or four buds; next Spring allow two buds to produce branches; in the Fall cut one down to three eyes, leaving the other to produce fruit; the following Spring let one bud sprout from the lower spur, and make it grow all that it will, to serve as a fruit producing cane the next year, while the cane produced the previous year is allowed to bear; in the Fall cut down the cane that has fruited to two or three buds, and thus alternate yearly thereafter.

The grape grower must in pruning invariably make calculations for one year ahead; must not suffer too much foliage, but it will not do to strip it off in Summer; clusters must be produced in the shade, the sun ruins them; pinches off laterals, but not the ends of the vines. It is useless to plant in springy ground; cultivation must be clean in the fore part of the season.

Mr. Leland raised Concord; laid them down in Fall, and covered with dirt. Cautioned against uncovering too early in Spring.

Mr. Jewell said the Delaware often failed by reason of the manner in which it was propagated; if one wants strong healthy plants, they must always get an old wood layer; he preferred Rogers' hybrid to the Concord. Recommended Nos. 3, 4, 15 and 19.

Mr. Harris' resolution in regard to the Concord was adopted.

Mr. Harris moved that layered vines of the Delaware be recommended for general trial.

Carried.

Mr. Jewell moved that Rogers' hybrids Nos. 3, 4, 15 and 19, be also recommended for general trial.

Adopted.

Mr. Harris thought the Iowa was doing well; much better than when Dr. Grant sent it out. Moved it be recommended for general trial when propagated by layering the old wood.

Mr. H. stated, in answer to an enquiry, that he had fruited it three years.

Motion lost.

Mr. Jordan moved to recommend the Clinton for general cultivation.

Lost.

CURRANTS.

Mr. Harris spoke in favor of the more general cultivation of currants.

Mr. Mott had been very successful with the currant. Recommended it highly. Mulched his with chip dirt.

Mr. Leland condemned the Cherry Currant. It was a poor bearer and not very hardy. Moved that the Red and White Dutch and White Grape be recommended for general cultivation.

Adopted.

RASPBERRIES.

Mr. Leland moved to recommend Doolittle's Black Cap Raspberry for general cultivation.

Mr. Jordan moved to amend by recommending Philadelphia, Clark, and Doolittle.

Mr. Harkness moved to amend by substituting Philadelphia, Miami, and Doolittle.

Lost.

Mr. Mott spoke highly of a native Black Cap he had procured in the woods; was better than the Doolittle. Had fruited it eight years. Moved to amend by placing best native varieties at the head of the list.

Lost.

Mr. Jordan moved to amend by adding Purple Cane.

Lost.

Mr. Elliot moved to add Seneca Black Cap to the list.

Lost.

The question was then put on Mr. Jordan's first amendment, and lost.

Mr. Jewell moved to amend by placing Philadelphia on the list.

Carried.

Mr. Leland's motion as amended was then adopted.

Mr. Harris moved that Mr. Hoag's Black Cap, a native Minnesota variety, be recommended for general trial.

A motion to amend by naming it the Harkness Black Cap Raspberry.

Carried, and the original motion as amended, was adopted.

STRAWBERRIES.

The following strawberries were then, on motion of various gentlemen, recommended for general cultivation.

Wilson's Albany, Downer's Prolific, Brooklyn Scarlet, and Green Prolific.

Mr. Harkness moved to recommend Russel's Prolific.

Lost.

PEARS.

Mr. Brand moved to recommend the Flemish Beauty Pear for cultivation in favorable locations.

Messrs. Cook, Jewell, Waters and Harris all testified to its hardness. Thought it as successful as the apple, and a delicious fruit.

Mr. Cook moved to amend by substituting "for general cultivation."

Adopted and motion carried as amended.

Adjourned to 7 o'clock in the evening

THURSDAY EVENING, JANUARY 19TH.

Convention called to order by Vice-President Dart.

On motion, the subject of plums was taken up.

PLUMS.

A motion was made to place the Lombard Plum on the list for general cultivation, which was lost. This plum was considered by several members as the best English or tame variety, but is not hardy enough for our climate.

Mr. Elliot presented the Harrison Peach Plum, and exhibited some specimens of fruit which were very fine. It was brought to notice by Mr. William Harrison, of Minneapolis. Its origin is not known—probably a native plum. Bears much resemblance to the peach.

On motion, the Harrison Peach Plum was recommended for general cultivation.

Mr. Elliot also introduced the Newton Egg Plum, and moved to place it on the list. It is a fine variety of the native plum. The question being discussed the motion was withdrawn, as many objections were made to recommending any variety of the wild plum when there are so many good varieties in all parts of the State, that would prove worthy of cultivation if only brought to notice.

The following resolution was passed:

Resolved, That this Society recommend for general cultivation and improvement the best varieties of the native plum.

Mr. Elliott proposed making a list of the names of persons having choice varieties of plums, and placing it on the records of the Society. A motion to this effect was carried, and the list was made out as far as possible, as follows:

LIST OF PERSONS HAVING CHOICE PLUMS.

S. Kenworthy, Garden City Minn., Large Red.

H. W. Mendenhall, Garden City, Minn., Large Yellow.

C. P. Cook, Garden City, Minn., Large Purple.

Nathan Fisher, Beaver, Winona Co., Minn., choice variety.

E. B. Jordan, Rochester, Minn., Seedlings.

Ira Walden, Rochester, Minn.

A. W. Sias, Rochester, Minn., Golden Drop.

A. Lewis, Cannon Falls, Minn., nice variety.

Chas. Hoag, Richfield, Minn., two varieties.

———, St. Anthony, Woodcock.

Mr. Peck, St. Anthony, extra variety.

E. B. Rice, ———, purple variety.

Dr. Wright, Rosemount.

Wm. Harrison, Minneapolis, Peach, Big Red; Apricot, Nos. 1 and 2, and Long Yellow.

Mr. Grover, Richfield.

Peter M. Gideon, Excelsior, Minn., Excelsior Plum.

Chas. Waters, Springville, Wisconsin, Large Red,

STANDING COMMITTEES.

The Committee on Standing Committees and Topics presented their report, which was accepted and adopted with slight amendment, and committees appointed as follows :

MR. PRESIDENT AND GENTLEMEN : Your committee beg leave to recommend the appointment of the following Standing Committees :

1st. A committee on Fruit Lists, whose duty it shall be to prepare a list for the consideration of the Society, of all fruits they deem worthy of cultivation. Wyman Elliot, P. A. Jewell and J. S. Harris were appointed such committee.

2d. A committee to present a list of useful and ornamental trees and shrubs, whose duty shall be the same as that of the first named. C. P. Cook, M. W. Leland and — Hoffman were appointed committee.

3d. A committee to prepare a premium list on fruits, flowers and plants, to be presented to the State Agricultural Society for their consideration. Wyman Elliot, R. J. Mendenhall and N. Washburn appointed such committee.

4th. A committee of arrangements to superintend the Annual Exhibition. J. W. Harkness, P. A. Jewell and E. H. S. Dart appointed such committee.

WARRANTING TREES.

The subject of warranting trees by nurserymen was brought up and discussed fully.

The practice of warranting trees is thought to produce bad results, both to purchaser and seller, inasmuch as higher prices must be charged for stock, in order that the nurseryman may save himself in making good the losses from carelessness on the part of the planter. The purchaser will not be as careful if his trees are warranted, as if he had to stand the loss in case of neglect. If higher prices are asked by home nurserymen, agents from other States or distant parts will come in and undersell, warranting their stock, which warrants they never fulfill. The planters should purchase of none but well known and responsible men, which would tend to make all tree-dealers more honest; and if trees were not warranted, the planter would be careful.

The following resolution offered by Mr. Jewell, and adopted by unanimous vote, embodies the sentiment of the Convention.

Resolved, That in the estimation of this Society, the practice of warranting trees, further than to be of good quality, true to name, and in good condition at the time of delivery, is highly injurious to the purchasing public, being calculated to encourage carelessness in planting and after-care.

STATE AGRICULTURAL SOCIETY.

On motion, two delegates were appointed to apply for admission to the State Agricultural Society, to represent this Society in the next meeting of that body. J. W. Harkness and Wyman Elliot were appointed.

COPY OF PROCEEDINGS, ETC.

On motion, the Secretary was instructed to purchase one hundred and fifty copies of the *Faribault Republican*, containing the proceedings of the convention, to be distributed among the members of the Society, and sent to other persons and Societies.

On motion of Mr. Harris, the Executive Committee were instructed to call a meeting of the Society in the month of July, next, if deemed expedient.

The convention then adjourned, to meet again at such time and place as the Executive Committee may designate.

E. H. S. DART, Vice President.

A. W. MCKINSTRY, Rec. Sec'y.

MINNEAPOLIS MEETING, JANUARY 9TH, 1872.

FIRST DAY.

MINNEAPOLIS, January 9th, 1872.

The Annual Winter Meeting of the State Horticultural Society convened at Kelly's Hall, Minneapolis, at 10 o'clock A. M. The meeting was called to order by the President, R. J. Mendenhall. At his suggestion, the exercises were opened with prayer by Rev. Mr. Fuller, of Lake City.

Col. J. H. Stevens, of Hennepin county, was appointed Secretary *pro tem*.

MEMBERS 1872.

E. F. Drake, St. Paul.
 Truman M. Smith, St. Paul.
 W. E. Brimhall, " "
 D. A. J. Baker, "
 Thomas T. Smith, "
 S. Bates & Son, Stockton.
 W. K. Bates, "
 Geo. Wilkinson, Red Wing.
 L. E. Rice, Kasson.
 F. G. Gould, Excelsior,
 Peter M. Gideon, Excelsior.
 A. W. Latham, "
 John Hart, Winona.
 Norman Buck, "
 J. T. Grimes, Minneapolis.
 Col. John H. Stevens, Minneapolis.
 S. C. Gale, "
 R. J. Mendenhall, "
 C. M. Loring, "
 Chas. Hoag, "
 A. Stewart, "

S. T. Mill, Garden City.
 Lewis Porter, "
 C. P. Cook, "
 Silas Kenworthy, Garden City.
 Robert E. Moore, Le Sueur.
 Robert Goodens, Mankato.
 Lewis Martin, Anoka.
 J. H. Moody, St. Anthony.
 Henry Stubbs, Long Lake.
 E. H. S. Dart, Owatonna.
 O. F. Brand, Faribault.
 C. D. McKellip, "
 A. W. McKinstry, Faribault.
 Levi Nutting, "
 John P. Andrews, "
 O. P. Whitcomb, Rochester.
 John S. Harris, La Crescent.
 John Sherwin, Fergus Falls.
 Ditus Day, Farmington.
 Wm. Sleight, Delano.
 G. W. Fuller, Lake City.

On behalf of the citizens of Minneapolis, Col. Stevens delivered the following address of welcome to the delegates :

Gentlemen of the State Horticultural Society :

In behalf of the citizens of Minneapolis, I bid you a most cordial welcome. They feel highly honored and gratified that your Society, in its wisdom, selected this city to hold your annual meeting. They will endeavor to make your sojourn pleasant. They ask you to gather around their firesides as valuable guests. They fully appreciate and recognize the great worth of your labor, not only to the present, but to future generations.

Judge D. A. J. Baker, of Ramsey county, moved that Messrs. Jewell, of Lake City, Elliot, of Hennepin county, Hart and Burd, of Winona, and Brimhall, of Ramsey, be appointed a committee to bring forward topics for discussion during the session of the Society. After a discussion upon the subject of appointing a committee on nomenclature, in which Messrs. Jewell, Elliot and Judge Baker took part, the Society adjourned till 2 P. M., the subject under discussion being laid over till to-morrow.

AFTERNOON SESSION.

Owing to the time consumed in arranging specimens of fruit, the meeting was not called to order until 3 o'clock. Mr. Mendenhall in the chair. The matter of making some change in the committee on nomenclature was brought up, and some changes suggested, but the matter was again laid over until to-morrow, to await a further attendance.

The committee on Order of Business reported the following

PROGRAMME—TOPICS FOR DISCUSSION.

- 1st. Apples (including seedlings). Relative value of different varieties, embracing the question of hardiness, productiveness, quality and keeping.
- 2d. Site for an orchard, manner of planting, mulching, time and method of pruning.
- 3d. Top-working, grafting, budding.
- 4th. Insects; injuries to trees and fruits.
- 5th. Pears; varieties; standard or dwarf.
- 6th. Cherries; varieties for cultivation.
- 7th. Plums; varieties; native and cultivated.
- 8th. Small fruits—raspberries, blackberries, strawberries, currants and gooseberries.

The committee recommended that each speaker be limited to five minutes on each question, unless by the unanimous consent of the convention more time be given.

Adopted.

On motion, the following resolution was adopted :

Resolved, That D. A. J. Baker, of Ramsey county, and Norman Buck, of Winona county, be and are hereby appointed a committee to present a memorial to the Legislature and solicit their favorable action thereon.

The following memorial was prepared by the committee and accepted by the Convention :

To the Honorable, the Legislature of Minnesota :

The memorial of the State Horticultural Society in convention assembled, would respectfully represent to your honorable body, that the State Horticultural Society is now holding its annual meeting in the city of Minneapolis, and they petition your honorable body to visit the Society while in session, on Wednesday the 10th, or Thursday the 11th inst., for examining the fruit on exhibition. The Society deem it important to add, that the fruit on exhibition is all raised within this State, and as an emigrant document the Society is persuaded that it cannot fail to exert a powerful influence in inducing emigrants to make our State their future home.

If the public business is such that the members of the Legislature cannot visit the Society in a body, it is hoped that a joint committee may be appointed for that purpose.

And your petitioners will ever pray.

R. J. MENDENHALL,
President State Horticultural Society.

CHAS. D. McKELLIP,
Secretary.

APPLES—DIFFERENT VARIETIES.

The first topic for discussion was taken up, viz. : Apples ; different varieties, &c., as per programme.

Red Astrachan.—Mr. Jewell, of Lake City, said the tree is a moderate grower, very hardy, late in coming into bearing. Does not bear largely every year. Would recommend every man to plant a few trees.

Mr. P. M. Gideon, of Excelsior, had some experience with the variety. Considers it rather inferior ; late bearer ; fruit not perfect ; would not recommend planting.

Mr. Brimhall, of Ramsey county, had grafted on Soulard four years ago ; has borne three years ; quite hardy, as hardy as Fameuse.

Mr. Buck, of Winona county, has some trees ; would not recommend planting largely.

Mr. Hart, of Winona county, has a few trees ; if setting an orchard, would not plant as largely as of some other varieties. Thinks it a very good apple, however.

Mr. Grimes says it is late in coming into bearing ; fine looking apples ; quality second class. Hardy as Fameuse in many locations as far north as Minneapolis ; would plant sparingly.

Mr. Bates, of Stockton, Winona county, has a tree set same time as some Perry Russets and Fameuse, but did not bear as well as the latter.

Sops of Wine.—Mr. Truman M. Smith has a few trees of this variety. Tree first class ; fruit good, but not No. 1.

Mr. Gideon—tree hardy as the Red Astrachan. Fruit perfect. Would recommend planting.

Mr. Hoffman, of Hennepin county—tree appears perfectly hardy. Thinks it a good bearer.

Mr. Latham spoke in favor of this variety.

Mr. Jewell says there are a few bearing trees in Southern Minnesota. Thinks the fruit better for eating than the Red Astrachan, but not so good for cooking purposes.

Mr. Truman M. Smith thinks it not so sprightly in flavor as the Red Astrachan.

Tetofsky.—Mr. Latham believes in the Tetofsky.

Rev. Mr. Fuller said—in Wisconsin, people are very enthusiastic over this variety, where it has been in bearing.

Mr. Smith has some trees; fruit good, but very tart. Tree hardy as Duchess of Oldenburg.

Mr. Hoffman considers it as hardy as any of the crabs.

Col. Stevens has trees that have borne for three years, hardy, and good fruit; prolific bearer; the earliest apple.

In answer to a question, Mr. T. Smith says, he has a variety he bought for Early Strawberry, that is earlier than the Tetofsky, and has ripened as early as July 10th.

Mr. Jewell said it was too slow a grower to be a popular variety with nurserymen; liable to be checked in growth in transplanting; but being perfectly hardy, an early bearer, and maturing its fruit the last of July, or first of August; should have a place in every man's orchard.

Mr. Bates, of Stockton, had top-grafted on a seedling tree; rapid growth was made and some fruit had been borne.

Mr. Jewell—season last of July, or first of August.

Mr. Cook, of Blue Earth county, thought best to recommend or discard varieties as their qualities were brought out by discussion; would recommend the Tetofsky for general cultivation.

Mr. Gideon objected to recommending any variety, for various reasons; especially on account of foreign tree agents palming off other varieties for those recommended.

Several similar objections were made, and it was decided not to recommend any variety, but let the discussions go for their worth.

Golden Pippin.—Mr. Gideon thinks it a good apple.

Mr. Cook says it is good; ripens early; hardy as the Duchess.

Query. Is Golden Pippin and Grimes' Golden Pippin the same variety?

Mr. Gideon said they are distinct varieties.

Mr. Jewell knows of but one tree of Golden Pippin in bearing in the State, which is in the grounds of Mr. Harris, at La Crescent.

Fall Stripe.—Mr. Brimhall has 19 trees of this variety set ten years ago. Have fruited three years; fruit sells well.

Mr. Gideon—it is a good apple; succeeds well, especially on a clay soil: has not done so well in loamy soil.

Mr. Jewell—the Fall Stripe or Saxton is a very satisfactory tree for either nursery or orchard. Apt to overbear. Very decidedly in favor of Fall Stripe; safe and profitable.

Perry Russet.—Mr. Brimhall has trees that have been set ten years; killed

back first and second years. Have borne three years; most valuable winter apple.

Mr. Goodyear, of Blue Earth county, has trees in bearing; bear large crops; nice and hardy.

Mr. Gideon—profitable to grow on clay soil. Not successful with him.

Mr. Hoffman said trees at Mr. Blaisdell's, near Minneapolis, were doing well.

Mr. Buck—no fruit he values more highly. His orchard is on northern exposure; soil, loam, with clay subsoil; keeps until January; late bearers.

Mr. Bates has one tree fifteen years old that produced thirteen bushels of fruit which sold for two dollars per bushel in Winona. Would recommend it.

Fall Orange.—Mr. Truman M. Smith has a tree that bore so heavily that it broke down.

Mr. Brimhall considers it one of the best varieties in the State.

Duchess of Oldenburg.—This acknowledged hardy variety was discussed at considerable length. Its objectionable features are that it is too sour; will not keep; dealers do not like to buy much of a stock at a time. It was thought best not to reject it just yet.

Ben Davis.—Mr. Smith—a good apple; one of the best; bears in four years from the graft; good keeper.

Convention adjourned till 7 o'clock.

EVENING SESSION.

Called to order at 7 o'clock.

Discussion of the Ben Davis was continued.

Mr. Jewell—a good variety; does not grow as large with us as it does further south; quality, second good; keeps until April and May, and even until June; would recommend for planting largely; bears early.

Mr. Smith does not mulch or protect in any way in Winter; clean cultivation as good as mulching.

Mr. Bates had apples in four years from graft; valuable winter apple; raised largely in Winona county.

Golden Russet.—Mr. Latham—trees seven and eight years old in Excelsior have borne the past season; never killed down.

Mr. Brimhall does not consider it as hardy as Fameuse or Red Astrachan. It has not done as well with Mr. Truman Smith as some other varieties.

Mr. Jewell thinks there are five hundred trees of English Golden Russets in Minnesota. Thinks it as hardy as any tree we have; no fruit that keeps better; as good quality as the Ben Davis. It is sometimes confounded with the American Golden Russet; subject to blight, especially in Southern Minnesota, and in Northern Iowa it is discarded almost entirely. Aside from blight, it is an indispensable variety.

Fameuse.—Mr. Truman M. Smith has trees twelve years old; borne crop

five years; fit to eat in October; can be kept till April. If confined to one variety, would choose the Fameuse. No apple retails so well in St. Paul.

Vendome.—Was called up, but no one present knew any thing about it.

Summer Pearmain.—Mr. Hart thinks it one of the very best apples.

Mr. Stubbs has a tree that bore heavily, but quite a different apple from Mr. Hart's specimen.

Mr. Bates—quite hardy; as much so as any variety he has in his nursery.

Early Red.—Mr. Smith—medium size; spreading tree; dark wood.

Blue Pearmain.—Mr. Gideon has trees ten years old; hardy as the Duchess; does not grow as rapidly, or bear as early, but bears profusely; good keeper; will keep till Spring; no apple as safe to plant; bore fruit for him at seven years old.

Mr. Buck says it is very hardy; bears heavily; good keeper; would recommend planting largely.

Westfield Seek-no-further.—Mr. Smith thinks it a good apple.

Mr. Harris, of La Crescent, says it is his favorite fruit; trees tender, when young; apt to blight; would do well along the Mississippi, among the bluffs.

Mr. Bates has had good success with it in his nursery; should be planted in sheltered locations.

Haas.—Mr. Smith has sold the Haas fruit grown in Minnesota, and has trees growing; second rate dessert apple, but first-class for cooking; sells well.

Mr. Brimhall had trees bearing at seven years; valuable variety for this climate.

Mr. Latham knows of many Haas trees; will kill back a little of the last year's growth, but not enough to injure the tree.

Mr. Jewell says it is a strong grower. In seasons of late growth the tips of the limbs kill back slightly, but does no injury to the tree, as is the case with some other varieties; bears early; second grade in quality; markets well; as good fruit as Ben Davis; no winter variety any better.

Mr. Jewell said the Haas and the Horse Apples are entirely different.

Northern Spy.—Large and handsome specimens were presented by Mr. Harris, who says it is not as hardy as Haas or Duchess, but more so than the Tallman Sweet. Very late bearer; his trees were planted fourteen to seventeen years before they commenced bearing; would not recommend for all parts of this State; tall grower; not suitable for the prairies; should be planted in sheltered localities where they would be protected from the wind.

Mr. Leland said they bore heavily; considered them good fruit. There was a difficulty in gathering the fruit, and they were poor for shipping, on account of bruising easily.

Plum Cider Apple.—Mr. Latham wanted to hear about the Plum Cider Apple.

W. E. Brimhall said he had trees set out ten years ago, that had fruited three years. Fair eating apple—a good tart. The specimens shown were large. One tree he gathered eight bushels from. His soil was heavy clay, with a south east exposure.

Mr. Latham said he considered them the most hardy of any standard apple grown in his section. The Duchess had been badly injured standing by them.

They bore well. They rarely rot, and healed over from hail bruises. Better eating than the Duchess, and as good for cooking. Advised that they be raised.

Mr. Bates inquired—"what age before bearing."

Mr. Latham named a gentleman whose trees were ten years old, and had fruited four years.

Mr. Gideon had some trees that bore at about the same age. The fruit with him was inferior.

Mr. Brimhall reports that his experience showed them very good for cooking.

Mr. Harris wanted to know what the characteristics were of a good cooking apple; he thought a good one was one that cooked tender, and that had as good flavor after cooking as one eaten out of hand.

Tallman Sweet.—Mr. Smith wanted to hear from the Tallman Sweet. He found that by combining the Souldard Crab with the Tallman, they made good sauce. One of his trees had borne four years and was ten years old. They were not an entirely hardy tree. The fruit kept well, and he thought the tree worthy of cultivation.

Mr. Gideon had never fruited any; he had some, but did not speak highly of them.

Mr. Hoffman reports very favorably on this apple.

Mr. Harris' wife could not keep house without them. He raised forty barrels last year. Three years ago, he thought them the hardiest trees he had. Two years ago, the bark split, but he lost none. He saved them by earthing them up as far as frozen, and they made a good growth the same year. It is a profuse bearer, and is as good as any thing the farmer could plant. Will not do well on sandy soil. Thought that every farmer should plant them; was strongly in favor of it. He had another that looked like it, which he thought sweeter and richer, and would keep till July.

Mr. Stevens thinks it will grow on sandy soil, and cited instances.

Mr. Bates did not take any stock in the Tallman Sweet. He had lost many trees, and thought that soon they would all be gone.

Mr. Jewell thought its record not good. In Northern Iowa, many trees were killed by bark-bursting. It however meets with some success. Thought there was a better sweet apple. Unsatisfactory tree for nurserymen.

Mr. Stubbs had six trees, and three of them lived and three did not. He thought them very good; but what he called the "Winter Sweet" he thought better.

Mr. Cook thought in some localities they would do well. Thought them slow in coming to maturity; thought them not a success in all localities.

The Yellow Bellflower.—Mr. Hart wanted to hear from the Yellow Bellflower.

Mr. Dart spoke favorably of it.

Mr. Jewell thought on clay soils it would do well; not extra hardy; tardy bearer on rich soils; one of the best trees grown, but could not recommend it for general cultivation.

Identical Kinds.—Mr. Jewell—it was concluded that Utter's Red, the Lucy, and the Winona Chief, were identical. Some claimed otherwise.

Mr. Bates was glad the question was brought up. He was not so certain about their being the same. Lucy and Winona Chief are not the same, he thought. He wanted the matter sifted.

Mr. N. Harris had been on a committee to investigate the subject. He said you will see great difference in apples that grow on the same tree. Localities affected the same apple. He was persuaded that the trees were the Utter's Red. The trees were not perfectly hardy, but were a good variety.

Mr. Jewell felt no doubt about their identity. Had been of that opinion for two years. He cited many cases that went to prove them the same. They were identical, probably with the Cooper.

One gentleman desired to know the distinction between species and varieties. The question being one that would call out considerable discussion, it was thought proper to defer consideration of the subject until a future time.

On motion of Mr. Harris, that part of the former action, which made 10 A. M. and 2 P. M. the hours of meeting, was rescinded; and 9 A. M. and 1 P. M. named in place of those hours.

On motion, it was resolved that an invitation presented at the meeting to-morrow, be extended to the citizens of Minneapolis.

The meeting then adjourned till 9 o'clock Wednesday morning.

SECOND DAY.

Convention called to order at 10 o'clock by the President. The President then proceeded to deliver

THE ANNUAL ADDRESS.

Gentlemen of the State Horticultural Society:

When that worthy old veteran in horticulture, and one who has at heart the best interests of Minnesota—Col. John H. Stevens, I mean—made the announcement through the morning papers, that I would address you at this time, I felt then, and still feel, that some one else might better fill the place. But from his years and long service in the field, it seemed that it was his to command, my business to obey. And now in doing so, I shall endeavor to be as brief as the occasion and object of our meeting will permit.

Since your last meeting, another year, with its sunshine and shadows, has passed away,—a year joyous and happy to many, and of grief and sorrow to some. Yet to most of those engaged in horticulture in this, the North Star State, the past year has been one of bright promise. Let us render unto God, the giver of every good and perfect gift, heartfelt gratitude for this, as well as for all other blessings, He has so bountifully bestowed upon us.

Your labors during the past year have been crowned with more than ordinary success, even greater, for your most sanguine hopes have been more than realized. You have seen the blossoms of May, ripen into golden russet

and red-cheeked fruit, in Autumn. Allow me to congratulate you on the favorable auspices under which we have met, gathered as we now are, from the different sections of the State, to hold this our annual, and at the same time, our Winter meeting. The season of the year is very opportune. The storm king, Winter, reigns without. It is a fit time for us to meet and compare notes, exchange experiences, relate to each other the failures, as well as the successes that have attended our labors, to impart the *modus operandi* of our work in our chosen field. Doubtless many subjects will be presented for discussion, about which there will be various opinions, and while I would recommend earnestness in the expression of our views, it behooves us to let our frankness be tempered with that charity that is not puffed up.

In our discussions we should take into consideration the various qualities of soil which surround our respective homes, and report our progress in the various matters so interesting and so necessary in the propagation of fruit and trees. Nor can we afford to neglect, in our deliberations, to discuss the best methods of cultivation of the most beautiful gift of Heaven, the flowers and the plants which bear them, the absence of which, around our dwellings, gives our homes a dreary, cheerless and uninviting appearance.

Horticulturists are more dependent upon their associates who are engaged in the noble calling, than almost any other class of people. Theirs is a progressive life. New discoveries in the horticultural world are of daily occurrence; experiment upon experiment is constantly being made; new things and new theories are constantly coming to the surface. What a boundless field opens before the devoted and enterprising student in horticulture. Nor should our light be hid under a bushel, for what we know and what we have learned by hard and costly experience, we have no right, as good citizens of this young and growing State, to keep within our own breasts; but we should herald it forth with tongue and pen, and let our homes, our surroundings, our orchards, shade trees, flowers, and our lawns, blaze forth so brightly, that any passer-by may know that no sordid selfishness reigns within.

Gentlemen of the State Horticultural Society, you should feel proud of your past year's efforts and success. The darkness that surrounded, and the heavy clouds that hung over your earlier efforts have been dispelled.

Perhaps it would be premature to say that it is an established fact that Minnesota will be a great fruit-growing State yet. We are warranted from experiences of the past three years, in declaring that such is our belief, at least, in regard to the apple and small fruits. The experience of the past ten years is a sufficient guarantee. We have accomplished much. We have much yet to overcome; perhaps, however, not more than all new countries have had to contend with, although, in some respects it seems that ours is a peculiar soil, climate and exposure, and will require a cultivation peculiar to our State.

In what part of the world do we find such soil, such extremes of heat and cold, such winds, and such droughts as we most always have, pending the flowering and fruiting of that most delicate of all fruits—the strawberry? These subjects and the best method to overcome the difficulties should claim

your closest attention. No New England mode of managing fruit trees will answer here; nor can we adopt the Middle State method, nor yet that of Ohio or Indiana. We stand almost alone, though Western Wisconsin and Northern Iowa, perhaps, have similar difficulties to contend with. And, indeed, I think I would recommend the organization of a Northwestern Fruit Growers' Association, to include Minnesota, Iowa and Wisconsin. I present this, because I have had some correspondence with the Wisconsin State Horticultural Society on the subject.

There are many subjects that should receive your best attention at this meeting. Such as are immediately connected with the propagation of fruit trees and flowers will of course be considered in their proper place, without my calling especial attention to them. You will also revise the list of apples, which you will recommend to the people of this State as worthy of cultivation; and while on this subject, allow me to suggest that you do not make the list too long. Be careful and let them know that it is fruit you are desirous of giving them, and not simply their money you want.

Another subject presses itself upon my mind, and I hardly know how to introduce it. We should have a committee on nomenclature, a large and intelligent one. And then, at our Fairs, all fruits entered for competition should be named. If there are seedlings, and the originator does not wish to give them names, he must submit them to the committee on nomenclature, and a description of the fruit with its name, should be recorded in a book kept for this purpose by the committee.

It is high time that our work in the field and hall, should be systematized. Thus far it has had the characteristic only of the conglomerate. It should have that of the bright and pointed crystal, and I invite your undivided attention to the necessity of bringing things into line. We also require a full code of laws to govern us at our annual and other fairs; and while they are laws, let them be firmly administered; if wrong make them right at your next annual meeting. If any one has any thing that he thinks is particularly nice and better than any one else, and wishes to enter the arena, it is his own fault if he is beaten, simply because he is ignorant of what was required by the Society. We must smart for our ignorance with regard to these laws. We must post ourselves up on what is necessary to enter, and contend for the prize, and if we do not conform to these very just requirements, let us hear no whining. While I am a strong advocate of mercy, I think it should be accompanied by its twin sister, Justice. I have dwelt at length on this subject, for the reason that we so frequently hear complaints after fairs, such as this: "why if I had only known *that*, I would have got the premium on my grapes, or Duchess, or beets"; or "I do not think the committee were fair."

And there is another thing that I want, most especially, to call your attention to, and in the language of the mother of Solomon—"Don't say me nay." How often do you hear of the failure of fruit trees. They die, they freeze, they thaw, the dry weather affects them. In the language of President Hobbins, of the Wisconsin State Horticultural Society, "I have thought much of the remedy." He says, further—"My own opinion is that a radical

change might be made in this respect with great profit to all concerned, the legitimate sellers and buyers of fruit trees. And I would suggest this, the planting of such trees only as we know will grow an edible fruit in any and all the settled parts of the State. It is in vain to try the indiscriminate purchasing and planting of trees now everywhere observable in this Northwest by any less radical means. Tree peddlers and agents, and eastern horticultural and agricultural journals are doing more damage to our horticultural interests than can easily be believed, except by those acquainted with the case.

Our climate has to bear a great deal of blame for the mischief to our orchards, gardens and vineyards, which in reality is solely attributable to the misdirections of outside writers, and the cupidity and dishonesty of outside nurserymen, for if the nurserymen did not send out these borers and bark-lice gentlemen, it would certainly be impossible for them to invade us.

Our own people, I mean the masses who want to grow fruit for their own use, do not to a sufficient extent, subscribe for and read our own agricultural and horticultural journals. If they would, there might be a fewer dupes of these foreign tree hucksters, who generally sell what they have to sell regardless of name or nature.

And let me here say a word about our journals. I think the time fully at hand when they should speak out in unmistakable language, and brand with infamy any one, be he agent or principal, who attempts to palm off any tree, shrub or flower, that he knows will bring to the purchaser nothing but disappointment and chagrin.

You, gentlemen of the State Horticultural Society, are looked upon as a noble band of men, and deservedly so. Men who are trying to give the people of this young and growing State, an apple juicy and mellow. You will do it. You are now in the bud and bloom, and many of you, long before you are borne from work to reward, will pluck the ripened fruit. I am very desirous that you who have borne the heat and burden of the day should reap the reward of your labor, and my belief is, that if you will make a united effort, our own people may be supplied with trees by our own nurserymen; and these will be the best weapons that can be used against these unscrupulous bark-lice gentlemen that periodically infest our State. You say I am too severe! I say, I mean to be severe. And while I acknowledge that there are many noble and honest horticulturists that visit our State—many of their faces are familiar to us all—yet I cannot, but in a measure, hold them responsible for a portion of the imposition our honest and unsuspecting people are subjected to, for if they did their duty, they would see that their own State Societies frowned down the exportation of trees into any State, the adaptability of which might be questionable.

Let us educate the people. Let us give them fruit. If a crab, let it be so understood. You can guarantee that it will live. Then, if the Duchess, Fameuse, Red Astrachan, Wealthy, Bates, Woodward, Perkins, or anybody else's seedling has, or does prove worthy of culture, you can recommend to your customers to buy these, and if you have not deceived them before, they

will buy again, and, in the language of Dr. Warder, "We will educate our people in horticulture. Give them such fruit as you know will grow, and they soon will want more and better fruit."

I shall not recommend any particular course to be followed in the discussion of the various subjects that will of necessity present themselves. Do this in your own good order and time. It is quite true that the proceedings of this Society should be spread broadcast over the land, so that the people may know the progress made in our particular line. In view of this I would recommend that a petition be presented to our Legislature now in session, for a small annual appropriation to be used in the printing of our proceedings in pamphlet form. Also, for the establishment and maintenance of experimental gardens in different parts of the State. I doubt not but the land would be freely donated in the different sections. We also want the appropriation to cover an amount that we could offer annually as premiums on the best fruit grown in the State. I think the State can do no less than make the appropriation. What has the State done for agriculture? It should certainly do the same, if not more, for its better-half, horticulture. Their interests are the same. The State Agricultural Society receives annually, over one thousand dollars from the State. There is no good reason why our Society should not receive State aid. As an inducement for emigration, the fact of the successful production of fruit is almost, if not quite, equal to that of our whole combined agricultural resources. Especially this is so in regard to those who are seeking new homes from the fruit growing parts of the continent.

The Society was ably represented at the recent American Pomological Society, held at Richmond, Virginia, by its delegate, P. A. Jewell, Esq., of Lake City. The fruits selected by him from different sections of the State attracted much attention, and the commendations bestowed from the members of the National Society, as well as the press, must be extremely gratifying to every Minnesotian. His report will form an interesting part of the records of this meeting. The Treasurer's report shows a small balance in hand.

We cannot easily estimate the good already accomplished. There is a large field for its continued usefulness. During the past few years, much attention has been given to the vineyard. Grapes of very many varieties, some of a semi-hardy character have been introduced with the most flattering results.

There is a growing appreciation by our people for choice plants, rare flowers, and ornamental shrubbery. It is with pleasure that we notice a fondness for evergreens.

It is your duty and business to cultivate this appreciation; and you will soon find that you cannot supply the demand unless you add greatly to your nursery stock.

It is to be regretted that some system has not been adopted by State authority, or that some premium list has not been offered to encourage the planting of trees, in the prairie districts of the State.

It is only a question of time when tree planting will be encouraged by law.

Our elder sister, Iowa, has such a law, which is simply this. Every acre of forest trees planted, releases taxation for ten years on one hundred dollars valuation; and for each acre of fruit trees planted, tax is exempted on fifty dollars valuation for five years—and in proportion for shade trees and hedges along the public highways. There is now in that State, maple forests from which sugar is made, where fifteen years ago there was nothing but prairie grass, and hazel bushes.

Let us reap advantage from the experience of our Iowa friends. Many of us are looking forward to the time, when each school-house will have its gardener, and also to the time when some of the branches of horticulture will be taught in our public institutions of learning. Many of the Western States are full of experiments. This is one which will sooner or later be made, and if ours should lead off in the movement, it will not be the first time we have inaugurated, in advance of other States, improvements of a judicious character.

What the Society should have most at heart, is the best interests of the people of the State. Our efforts in horticulture are being acknowledged all through the country. We see it in the formation of county societies, the crowds that attend our fairs, the eagerness with which people listen to any discussion on the subject of fruit growing. Now let the Legislature lend us a helping hand. Let it make an annual appropriation of a small amount, to publish our transactions, carry on our experimental gardens, and offer liberal premiums.

Nor would this be giving us more than our just deserts. Hundreds of thousands of dollars are annually sent out of the State for fruits. If the Legislature will lend us the asked for aid, we will in a few years put a stop to the drain, and in due time pay it back to the State in increased valuation of property for taxation.

One more subject and I am through. Scarcely anywhere in my acquaintance, North, South or East, is the interest of the horticulturist so preyed upon by insects as in Minnesota. Plant, flower and fruit, have each their entomological enemy. Vegetable, shrub and tree, is trimmed, cut and bored by individuals of the many myriads of insects that live away on till Winter sets in. And with a view that our people may have some knowledge of what they have to contend with, that they may know their friends from their enemies, I would suggest that you also look toward the appointment of a State Entomologist at an early day. And this also should receive Legislative aid.

And now, gentlemen, in concluding my remarks, it is my painful duty to allude to the loss the Society has met with in the death of its late corresponding Secretary, J. W. Harkness, of Faribault. He was one of our most active members. He labored faithfully and earnestly in the good work. Taken from us as he was, in the prime of manhood, cut off from a life of usefulness in this world of sorrow; his friends and associates will cherish his memory, and his name will long be remembered in connection with the earlier history of fruit growing in Minnesota.

From the first dawn of horticulture as a science, men of all classes and grades have engaged in it. As a general thing their standard of morality has

been equal to that of those following that of other callings. But shall we not here pause, and ask ourselves the question—is this sufficient? Does it not become those who make a profession of developing the beautiful of the vegetable world, to possess higher, and aim at nobler ideas than those who have to do only with inanimate things?

We are placed in close contact with nature's sweetest smiles, and it is our privilege to reach toward the great heart of nature, and be assured she has fields beyond our vision adorned with animation and beauty equal to those through which we take our daily rambles.

But when the microscope fails us, and we commence to retrace our steps, we admire the beauty of the mosses and ferns, thence we come up to the more useful grasses and plants, cultivating the herbaceous and shrubby plants, and still on until now we have reached the trees, and standing under the monarch of the forest, the giant sequoia, we are astounded at its magnificence.

Ought not all these things, given to us in divine wisdom, to bring out and develop the best and highest attributes of our nature?

A resolution of thanks was voted to the President for his able and intelligent address.

DISCUSSION OF APPLES CONTINUED.

Sweet Pear.—Mr. Cook, of Blue Earth county, said it is a hardy and valuable tree; never knew it to kill; fruit not large, but good.

Mr. T. M. Smith has seen the fruit grown in our State, and has sold it. It sells well.

Mr. Harris, of La Crescent, has no bearing trees, although he has them ten years old. Thrifty grower, and appears hardy.

Mr. Jewell says it is a profuse bearer on clay soil; on prairie soil in Wisconsin it does not do very well; bark bursts around the crown. There are many trees in Minnesota; they are subject to fire-blight; has known it in bearing in Minnesota for five years.

On motion of T. M. Smith, the following resolution was adopted:

Resolved, That we extend an invitation to the Presidents of the different railroads of Minnesota to visit this meeting, and examine the fruits on exhibition, and see whether they are not worthy to be considered good immigration arguments.

TRIBUTE TO A DECEASED MEMBER.

Mr. P. A. Jewell, of committee on resolutions respecting the death of James W. Harkness, presented the following which were adopted:

WHEREAS, It has pleased our Heavenly Father, since our last annual Winter session, to remove from the scenes of this life, our late fellow member the Corresponding Secretary of this Society, James W. Harkness.

Resolved, That we deplore the departure from our midst, while in the prime of life and usefulness, of one who was endeared to us as an earnest, zealous, and efficient member of our organization; and that we esteem it a melancholy privilege to bear tribute to his many virtues.

Resolved, That in the career of our deceased friend were developed those elements of strong self-reliance, of earnest and enthusiastic devotion, of a patient and devoted willingness "to labor, and to wait," in the face of all discouragements, for the accomplishment of a great end, which challenge our warmest admiration and respect.

Resolved, That the death of one who was thus devoted to the cause of fruit growing in Minnesota, while in its infancy, and who was one of the earliest and most indefatigable members of this organization, is an event that may well be recognized as a public loss, by all who cherish the interests of horticulture in our State.

Resolved, That in testimony of the respect in which we hold the memory of Mr. Harkness, these resolutions be entered upon the journal of the proceedings of this Association, and that the Corresponding Secretary be directed to transmit a copy to the widow of the deceased.

DISCUSSION OF THE APPLE RESUMED.

The Alexander Apple.—Mr. Brimhall said it is a hardy tree; fruit coarse; not a good keeper; apt to drop from the tree; sells well on account of its size.

Mr. Gideon has young trees that appear perfectly hardy; does well in Wisconsin; limbs tough and not apt to break when heavily loaded with fruit; fruit sells well; does better in Northern Wisconsin than in the south part of that State or Northern Illinois.

Mr. T. M. Smith has one tree planted ten years; not as hardy as Tallman Sweet or Fameuse; has just come into bearing; fruit rather coarse, large, showy.

Mr. Harris thinks it is a valuable apple for this State. Saw samples at State Fair raised north of Minneapolis. Knows of trees nineteen years old; hardy as Dutchess of Oldenburg; longer lived: quality not No. 1; good for drying, and for sauce. Tree can be pruned into any shape; good for prairies as it can be headed low; would rather have one Alexander than a dozen Tefosky, but thinks the latter is good.

Mr. Jewell says it is not as hardy as the Duchess; is not an early bearer; took specimens from Lake City to the American Pomological Society at Richmond, Va.; no fruit there of the same class equal to his in size or appearance; season continues about six weeks, while that of the Duchess is only two weeks. Its size and beauty make it sell well.

St. Lawrence.—Mr. Stubbs says, as a fall apple, it is about equal to any variety he knows of in our State; better than Duchess, and as large size; tree, hardy, slow grower; bears young—in four or five years.

Mr. Hart considers it good.

Mr. Harris thinks it is not a slow grower on all kinds of soil; with him it grows the most rapidly of any variety except the Northern Spy; says it is good; has raised about thirty bushels the past season; sells very readily; not good for shipping; bruises too easily; good for cooking; as hardy as any except three or four of the "iron-clads."

Pewaukee.—Mr. Grimes says it is a hardy tree; heavy fruit.

Mr. Gideon has seen original Pewaukee tree in Wisconsin; very hardy; has no bearing trees of his own, but his young trees are doing well; less subject to blight than any other out of fifty varieties.

Mr. Jewell has a dozen trees saved from fifty purchased in Wisconsin; thinks it will prove hardy with us; wood is late in maturing in the fall; would not compare it with the Duchess; quality, second rate.

Mr. Hoffman spoke of some seedlings that have been before the Society for two or three years, and that have not been named.

Mr. T. M. Smith moved that all varieties to be named, be placed in the hands of the committee on nomenclature.

Carried.

The following committee on nomenclature was appointed :

P. A. Jewell, Lake City.

J. S. Harris, La Crescent.

P. M. Gideon, Excelsior.

E. H. S. Dart, Owatonna.

Truman M. Smith, St. Paul.

Adjourned till 1 P. M.

AFTERNOON SESSION.

Called to order at 1.30. The Second topic was taken up, viz. :

SITE FOR ORCHARD, PLANTING, MULCHING, TIME AND METHOD OF PRUNING.

Mr. Jewell would select a high location, whatever the subsoil, the vicissitudes of temperature are less than low land. On the latter the days are colder, and the nights are colder. Trees always injure most on low land; fifty or one hundred feet may decide whether a man's orchard is a success or a failure. Would select clayey or gravelly clay subsoil; sandy land not objectionable, if properly treated: should be mulched not only under and close to the tree, but for some distance around it, in order to prevent drying out. When land dries out round the roots of a tree, the fruit grows small and is liable to drop off. Southern exposure is not objectionable if the ground is high so as to secure a circulation of air, but trees should be protected. If compelled to set trees in a valley, would not choose such an exposure, but would choose the highest land. Northern slope no object, except that the snow lies on the ground deeper and acts as a mulching; would protect an orchard by planting willows or evergreens around it—prefers evergreens. With proper care and precaution as to mulching and protection, trees will succeed almost as well on sandy as on clay soil.

THE LEGISLATURE.

[The committee on memorializing the Legislature to visit the Society while in session, and inspect its fruit on exhibition, here reported that they had been successful, and that a joint committee of both Houses, with the Governor and heads of departments will visit the Society to-morrow at noon.]

DEBATE ON ORCHARDS RESUMED.

Mr. Dart said there was no doubt that an elevated location is best for an orchard, but it is difficult to obtain on every man's farm. When land is all low, it should be underdrained; and when this cannot be done, the ground should be ridged, or the trees planted shallow, and the earth plowed up to the trees. Clay subsoil that holds water like a dish, is objectionable unless

it be drained. On land with deep sand, subsoil large holes should be made, and clay filled in before setting the trees. Has had experience in this manner of planting and succeeded well.

Mr. Truman M. Smith prefers high land with northern exposure. Judges from observation of forest trees, which are invariably larger and thriftier on northern slope; and this is true in his experience with fruit trees.

Mr. Gideon's trees do equally well on all sorts of exposures; southwest slope as good as any in his opinion, the only objection being on account of sunburn, which he would prevent by heading low, and protect from wind by close planting.

Mr. Harris thinks the matter of exposure is not as important as most people think. His best trees are on a southern slope. There is, however, a difficulty from sunburn and bursting bark, when the trees are young, which can be obviated by mulching and other protection until large enough to furnish their own protection by shading of limbs and fallen leaves. Would not select high knolls for orchard, on account of high winds and lack of moisture. In his opinion, forest trees are more thrifty on northern slopes because not so much run over by fires. Apples will grow any place where the water does stand within two feet of the surface.

Mr. L. M. Ford could not endorse what Mr. Harris said, except with the crabs.

Mr. Brand had always heard that a northern slope was best for fruit trees, but has yet to see an orchard with such exposure equal to those planted on land that inclines to the south, or south-east. Prefers high land, and dry soil.

Mr. Ford had not seen any thing but crab apples grow on sandy land.

Mr. Jewell cited a case where large quantities of Duchess, Golden Russet, and other large apples are grown on very sandy soil, and presented specimens.

Mr. Nutting thinks the benefits of northern exposure are moisture, and the protection afforded by snow, the place of which can be supplied by mulching well.

Mr. Stubbs would prepare the ground for planting by digging holes a year before and would put top soil in the bottom of the holes, and clay on top.

Mr. Hart thinks his fruit is most handsome that grows on southern slope.

The Third topic,

TOP-WORKING, GRAFTING AND BUDDING.

was taken up.

Mr. Dart thinks that some varieties of fruit may be successfully top-worked on the crab-stocks; would not recommend digging up crabs until it had been tried.

Mr. Jewell says the advantage of top-working lies in grafting semi-hardy varieties on hardy stocks, and by so doing, fruit can be successfully raised that could not be grown by the ordinary method of root-grafting; he would whip-graft, or bud. Budding is best to change the form of the head of a tree. Baldwin and Wagner apples, which are tender on their own roots, have done

well when top-worked. We may hope to largely increase our varieties by this method.

Mr. Brimhall had a Red Astrachan, which is a late bearer, produce fruit the second year after top-grafting.

Mr. Bates had fine success with Baldwins and Early Harvest, grafted on the top of a hardy seedling tree.

Mr. Brimhall endorses Mr. Jewell's views; had grafted several kinds on Soulard stocks four years ago, with scions taken from bearing trees; fruited second year. Does not think Soulard as desirable to bud on as Fameuse and some other varieties.

Question. Is a scion made hardier by grafting on a hardy stock?

Mr. Brimhall—it is.

Mr. Gideon—hardest trees mature wood earliest, and if tender kinds are worked on, they mature sooner on account of stoppage of the flow of sap. Prefers Soulard to any other crab for stock for top-working.

Mr. Dart—some kinds bear better when top-worked, and by turning the sap into fruit, buds and prevents rapid and excessive growth and increased hardness. Had known crabs to be injured by bursting of bark, but otherwise thinks the stock valuable for top-working.

Mr. Harris endorses Mr. Jewell's remarks; would not have tree-planters buy crab stock to top-work.

FOURTH TOPIC—INSECTS, INJURIES TO TREES AND FRUIT.

Mr. Jewell has been much annoyed by a large grey beetle on Duchess trees, which sometimes entirely girdle the new growth; they disappear about the first of June; knows no way of destroying but by catching; makes its appearance mostly on oak ground.

Mr. Kenworthy has had trouble in getting rid of leaf-lice: has syringed with a decoction of tobacco which did not do the work perfectly.

Mr. Dart thought the beetles could only be prevented by hunting out and destroying. There is an apple tree borer which works in the limbs which it takes great pains to cut out.

Mr. Jewell has used \$40 worth of fine cut tobacco for leaf-lice. Followed Kenworthy's course.

Mr. Brimhall says that a wash made of three pounds of sal soda to a pailfull of rain water will kill leaf-lice. Apply with a rag.

Col. Stevens had no success with sal soda cure.

Mr. Grimes thinks much depends upon the season of applying these remedies; two years ago he found great numbers of lice on his willows; he cut down the willows and washed the infected trees with soap suds, and has not been troubled since.

Mr. Howe thinks whale-oil soap is an effectual remedy for leaf-lice; apply on first indications of their presence; he used three ounces of whale-oil soap to a pailfull of water.

Mr. Harris has found whale-oil soap effectual; says carbolic acid, if strong, kills trees.

Mr. Gideon thinks hornets and yellow jackets eat leaf-lice; his treatment for borers is to bind ashes around the parts affected.

Mr. Mendenhall says there are sixteen hundred kinds of leaf-lice, and four hundred kinds of curculio. Ants do not eat lice, as is supposed by some.

Mr. Jewell described a moth trap which he had seen, and thought it a good thing. It is made of three or four shingles, which are cut out in the middle in crescent form on both sides, and fastened together by a screw, which also serves to fasten the trap to the tree. The moths hide in the crevices of the trap, and are killed by rubbing the shingles together.

Mr. Dart—bands of hay are often fastened around trees to trap moths.

THE FIFTH TOPIC—PEARS.

This subject was pretty thoroughly discussed by members from all parts of the State, and the prevailing opinion with all except Mr. Ford, was, that pears can be successfully grown in our State. Several varieties are already doing well. The Flemish Beauty appears to be doing the best of any variety thus far.

At the conclusion of the discussion of pears, Mr. D. A. J. Baker moved that a committee, consisting of Truman M. Smith, Wyman Elliot and Norman Buck, collect the statistics of apples imported into the State, and amount paid for the same, and report at this meeting.

Adjourned till 7 P. M.

EVENING SESSION.

Mr. Harris stated that at the last session of the Society a committee was appointed to select varieties of fruits for recommendation to growers of this State. He then presented the following report, which was accepted:

REPORT ON FRUITS.

Your committee on fruits beg leave to make the following report on fruits which they deem worthy of cultivation, for the consideration of the Society:

Apples.—Duchess of Oldenburg, Red Astrachan, Haas, Saxton, St. Lawrence, Price's Sweet, Alexander, Ben Davis and Fameuse.

Crabs.—Soulard, Siberian Apples, Transcendent and Aiken's Winter.

Pears.—Flemish Beauty and Buffum.

Plums.—German Prince and best native.

Cherries.—Early Richmond and Morello.

Grapes.—Concord, Delaware, Salem, Iona, Isabella and Ontario.

Currants.—Red Dutch and White Dutch.

Raspberries.—Doolittle, Miami, Philadelphia and Purple Cane.

Strawberries.—Wilson's, and Downer's Prolific.

It was moved that the varieties named in the list be taken up in their order and discussed, and a recommendation be given of all varieties worthy of general cultivation.

Mr. Harris thought the business of the meeting would be incomplete unless we decided on, and recommended some varieties for culture, if not more than three, so that new comers into the State would know where to begin.

Mr. Gideon objected to the Society recommending any varieties.

Mr. Baker also objected, because the imputation would be cast upon the Society of partiality.

Other members discussed the propriety of recommendation, for and against, and the Society finally laid the report upon the table by a unanimous vote.

Mr. Harris personally explained, that he did not sell trees, he was a market gardener, and florist, and he desired it to be understood that he would not reap a dollar's benefit from the recommendation of one or another variety.

Mr. Harris offered the following :

Resolved, That every member of this Society be requested to make a statement, in brief, of his experience in fruit growing in Minnesota, with the names of the varieties that have proved the best in his locality, and forward the same to the Recording Secretary to be filed for the use of the Society.

This resolution elicited some discussion, and the resolution was adopted after striking out "experiences," and making the report to consist of each with different varieties.

Mr. Edward Ely, of Winona county, then read an essay, on the first efforts at fruit growing, in his locality, as follows :

ESSAY.

Being appointed by the Fall meeting of the State Horticultural Society to write a sketch of the fruit growing of Winona county, I submit the following as a very brief outline of a subject which is of no little importance to the future of Minnesota.

I believe that it is generally conceded, that up to the present time, Winona county has raised a larger quantity, if not a better quality of fruit, than any county in the State. Mr. John Shaw has the honor of planting the first apple seeds in Winona county, or Southern Minnesota. In the Fall of 1851, Mr. Shaw, of Exeter, Penobscot county, Maine, determined to remove to the West. Before leaving, he gave out word to his neighbors that he wished to take with him a quantity of apple seeds. As a result of this notice, he obtained ten or twelve quarts of clear seed, made up in small quantities from his many neighbors. Mr. Shaw first stopped in Galena, Illinois, to spend the Winter. At this place, he became acquainted with some of the members of the Town and Village Association, whose destination was Minnesota City, at the mouth of the Rollingstone, six miles above the present city of Winona.

Mr. Shaw joined the Association, and was among the first of the main body to reach the place of destination. After finding the ground which was assigned him by a drawing which was made in the city of New York, the headquarters of the Association, his first work was to plant the apple seeds. This he did by selecting an open place in the timber, and breaking the sod with a spade, planted the seed, then cut away the timber to give them the full light and heat of the sun. It is perhaps a historical fact worth noting, that these seeds were the first seeds of any kind ever planted in Southern Minnesota, if we except what was done by some Indian trader. Mr. Shaw also brought with him sixty grafts of the choicest kinds of apples. These, of course, he could not use. He only lived to see the seed come up. In about sixty days he died from exposure incident to a new country. He was buried among the victims of that season of mortality. While dying, he, by a verbal will, requested that the little trees be divided among the members of the Association, and a committee was appointed to see that his last request was carried out.

This was the beginning of fruit growing in Winona county. The little spot where the seed was planted was surrounded by a rude fence, and the trees grew up for several years without much care. When large enough they were transplanted to nearly all the farms in the neighborhood. They have now been bearing fruit for several years, each year increasing

in quantity, so that many families have hundreds of bushels of apples to sell or to convert into cider. Some of the best trees are bearing from fifteen to twenty bushels to each tree. Among these are several most valuable seedling varieties; one which, I think, was named the Old Settler is very large. Grafts from many of these trees are much sought for wherever known. The apples, taken together, are preferred for cooking and for general family use, to any that can be found in our markets. It would be impossible to estimate with any degree of certainty the number of bushels raised from all the seedling trees from the nursery of Mr. Shaw, in the year 1871. Some of the largest single orchards are bearing from four hundred to six hundred bushels each. The aggregate number of bushels cannot be less than five or six thousand. The trees are found in nearly every farm in the valley of the Rollingstone, and on many farms far out on the prairies. In all cases the trees are bearing very much in proportion to the intelligent care they receive. One of the most valuable results coming from the pioneer labor of Mr. Shaw is, that it easily settled the fruit question, proving beyond controversy, by actual sight, that apples would grow in great abundance in Minnesota. Many a man, after looking at the orchards in the valley of the Rollingstone, and being convinced by his own eyesight, went back to his farm determined to make a second trial, and adding works to his faith, he is now receiving the reward of his labor. The above brief sketch is but a single branch of the fruit question in Winona county.

Very early the pioneer farmer was visited by the almost innumerable agents of nurseries from other States, and there is scarcely a farmer that did not purchase a liberal supply of foreign trees, and in many instances he was sadly disappointed, and this disappointment arose from many causes. First: the trees delivered were from a distant State, and were dead before he received them. Then, not even the soil or climate of Minnesota could restore them to life. Again, if they were alive, they were set out in the cornfield, where they were exposed to the stock which ranged without restraint during the Winter, or perhaps they were not cared for and left to struggle against those many enemies as best they could. The roots were eaten by the gopher, or the tree was scalded by the burning sun without protection.

Again, there is no question but the wild, unsubdued nature of the original soil is unfavorable to the growth of trees which are transplanted from a distant State. Again, many of our farmers sow all to wheat. They have wheat on the brain. They have no room for poultry or fruit trees. They must have wheat from the division line to the door-sill; and if they perchance, should be persuaded by the agent to try a few fruit trees, they will put them where they will be disturbed by the plow two or three times a year, and where they must be dwarfed and stunted by growing among the grain. Many times, the farmer with all these conditions and many more against even the probabilities of success, proclaims the apple tree a failure.

But there is a better side to the picture. Many, very many have succeeded in growing apples in great abundance in Minnesota. We have seen many orchards loaded with fruit in the valleys, on the tops and sides of the bluffs, and indeed, far out on the cold and bleak prairies. If one farmer can produce a fine orchard, another following the same conditions can do likewise, and so on to the end of the whole list of towns of our State. It may not be amiss to give a few of the names of the early settlers of Winona county, who have made the nursery of apples a splendid success. It would make a long list to name those whose orchards yielded more than a hundred bushels each in the year 1871, and those raising from ten to one hundred, would go far up into the hundreds.

The first man to raise grafted fruit in Winona county, and perhaps in the State, was Rev. Benjamin Evans, Rector of the Episcopal Church at the little village of Stockton, in the Rollingstone Valley. Mr. Evans was one of the early settlers. He was a man of fine taste and culture, and his early efforts gave great encouragement to the fruit growers of Winona county. We learn that Mr. Evans is now in feeble health and will soon pass away, and the friends of horticulture of Minnesota, deem it due to him that his name in this connection should be placed in the records of our Society.

The best, though not the largest orchard in Winona county, is one planted and cared for by Robert Cully, now dead. Ten years ago, he obtained by accident, one hundred trees from the city of Rochester, marked "extra." These he set out with great care in one of the small valleys near the city of Winona. The apples proved, what the trees were marked "extra," the very best and most approved varieties, and they were much improved in size and flavor and shape by the soil and climate of Minnesota. The bearing capacity of this orchard has increased from year to year, till last year they gathered three hundred bushels of apples worth \$2.00 per bushel, on ground but little more than an acre. This is only one of the many young orchards in the immediate vicinity of Winona. As a marker of reference, and for the

truth of these statements, I refer the reader to the Hon. C. T. Buck, who gathered from a few trees two hundred bushels, several of the trees filled five barrels each; Norman Buck, Esq., 200; George W. Clark, 250; Orrin Clark, 200; Mrs. Mary A. Campbell, 600; Wm. R. Stewart, 400; Laurance Thomas, 600. The two last named live 9 miles from Winona, one on the ridge and one in the valley. M. K. Drew, 200 bushels, in the city of Winona, in the sand. H. D. Huff had a large show of the best fruit. Mr. S. Bates, 300 bushels, who also has one of the largest young nurseries in the State, where he has all the approved varieties of the best trees. Last, though not least, John Hart, whose premiums at the Minneapolis Fair, and at the State Fair, amounted to more than one hundred dollars.

I shall be pardoned, in this connection if I relate a little incident, concerning Mr. Hart, which exhibits his early devotion to fruit growing. Some thirteen years ago, on the day that he voted to give the railroad \$5,000,000 loan, a friend called on him to go and vote. After the voting was done the friend asked him to go and take a glass of beer. Mr. Hart refused the beer; in place of it he took a couple of apples, and like a good man, he took them home to eat in the evening, with his wife. This done, they planted the seeds from the cores: from these seeds he raised eight fine apple trees, five of which are still living, and from these trees he obtained the same premiums of this last year.

I have said that some men failed to make the trees live. There is a man by the name of Eldridge, living near Winona, who paid, in all, \$200, for trees. They all died but one, so that he said a single tree cost him \$200. This man has now 3000 living trees, he set out in one orchard, and he has, prospectively, one of the largest and best orchards in the State. This same man raised strawberries sufficient to employ twenty men, women, and children, all the picking season, and made strawberries and Black Cap Raspberries pay.

In conclusion I would say, that Winona is no better for fruit of all kinds than other counties in the State of Minnesota. We have had a little more time, and perhaps have taken a little more pains. Go and do likewise. It is time to cease saying that apples will not grow in Minnesota. If a lone woman, without the aid of husband or children, can set out and care for an orchard that will produce each year six hundred bushels of choice fruit, what may not be done when every farmer shall give to the subject of growing fruit, that place which it ought to hold in our domestic economy. A proper regard to the coming question should induce us to plant fruit trees, and to plant them at our earliest opportunity, and if the trees die, plant again and again till we shall finally succeed.

An acre of land which is worth from ten to fifteen dollars in its native State is worth one thousand dollars when covered with a good, growing orchard.

I may say, before closing, that pears of the choicest varieties are grown in abundance wherever the trees have been set out and properly cared for.

At the conclusion, a vote of thanks was tendered to Mr. Ely, and the Essay ordered printed with the proceedings of the Society.

On motion, Messrs. Loring, Buck, Smith, Mendenhall and Baker, were appointed to meet the committee of the Legislature to come up to the Society to-day.

Mr. Gideon was then called upon and read an essay which was directed against fast horses in general, and against horses trotting at Agricultural Fairs in particular. The essay was placed in the hands of the committee on publication, to be used by them as they deem best.

The President suggested the subject of districting the State, which subject elicited some discussion, and was finally laid upon the table.

CHERRIES.

This subject was next brought up. Mr. Cook stated that a Mr. Myers, near St. Peter, had brought cherry trees from Germany, which are doing well, and are in bearing. The fruit is of dark a color, fine flavor, with a small pit.

Col. Stevens—in Minneapolis there are Morello, Early Richmond and Carnation Cherries which are all doing well.

ELECTION OF OFFICERS.

The election of officers next took place, resulting as follows :

President—R. J. Mendenhall, Minneapolis.

Vice Presidents—E. H. S. Dart, Owatonna; M. W. Leland, Rochester.

Cor. Secretary—J. S. Harris, LaCrescent, *pro tem*.

Rec. Secretary—A. W. McKinstry, Faribault.

Asst. Secretary—C. D. McKellip, Faribault.

Treasurer—Wyman Elliot, Minneapolis.

The Society then adjourned until 9 o'clock Thursday morning.

MORNING SESSION.

The Convention met pursuant to adjournment.

TREASURER'S REPORT.

Receipts, including the amount on hand at the beginning of the year	\$185 17
Disbursements.....	130 85
Balance in treasury.....	\$54 32

CRAB APPLES.

At the suggestion of Mr. Hart, the subject of crab apples was taken up.

Mr. Brimhall inquired whether cider can be made of Transcendent crabs; he says they are good for drying and for sauce.

Mr. Elliot made ten gallons of cider, but it was not good; sours too soon and has the crab apple taste; would not recommend raising for cider.

Mr. Gideon would throw away all crabs except the Soulard, and one or two others of the best winter varieties.

Mr. Howe thought the Society should pay more attention to the seedlings; he had seen two hundred and fifty to three hundred different kinds at the State Fair, and some twenty-five varieties were as good, in his opinion, as any of the named varieties there exhibited.

REPORT ON PUBLICATION.

Committee on publication made their report as follows :

We recommend that a committee of seven be appointed by this Society to visit the Legislature and procure the publishing, in book form, of all the proceedings of the Society, from its organization to the present time.

We also recommend the appointment of J. H. Stevens to compile the same.

The report was adopted, and a committee appointed as follows: D. A. J. Baker, Chas. Hoag, Norman Buck, Levi Nutting, C. M. Loring, Truman M. Smith and Horace J. Brainard.

It was voted to send specimens of the fruit on exhibition to the Capitol at St. Paul, to be there placed on exhibition.

CRAB APPLES, AGAIN.

Discussion of crabs was again taken up.

Mr. Jewell thinks the Transcendent a very good variety. The Hyslop, though "a thing of beauty" is certainly not "a joy forever," as it is so mealy and dry, and will not keep any length of time; would plant very sparingly. The Soulard will "keep forever," but is not good as a dessert apple, but makes good sauce cooked with Tallman Sweet; would plant few where standard apples will grow. Transcendent is not a cider crab, but makes fair champagne cider if put up in bottles and kept for a year. In his opinion the Orange Crab is the best.

Mr. Harris said every one should plant a few crabs. Has not had good success in making cider from Transcendents; his favorites are Aiken's Winter and Quaker Beauty; condemns Hyslop, but would plant a few where standards will not succeed well.

All the use Mr. Kenworthy has for crabs is for stocks for top-working, for which they are well adapted.

Truman M. Smith would not advocate planting largely. The reason good cider cannot be made from Transcendents is, because the weather is too warm in their season. Good vinegar can be made from the cider; such vinegar made by him brought the highest price in the market.

Mr. Harris says it requires two years to make vinegar, and cannot be done successfully with a factory.

Mr. Brand thinks that crabs should be planted to some extent in the frontier settlements, and in localities where apples do not succeed. They bear early and profusely. In setting an orchard he would plant one crab tree in every twenty-five, and would plant Transcendents along the roadside, outside of his orchard if he could afford it. They make a good protection for an orchard. Orange Crabs stand first as a dessert apple, and are profitable for marketing. Meader's Russet and Meader's Winter are also good—better than Transcendent and Hyslop.

On motion, the discussion of small fruits and grapes was dispensed with.

On motion, Mr. Truman M. Smith was appointed to prepare an essay on grapes, to be published with these proceedings.

VISIT OF THE LEGISLATIVE COMMITTEE.

At 11.30 the Legislative Committee arrived, and after a short address of welcome by the President, the committee appointed last year to visit the orchards in the various parts of the State, made a report; which report set forth that the committee had not been able to make their tour of observation as extended as they wish, but had been able to obtain the following facts:

There are eighty-nine varieties of grafted fruit of which the names are known, and about thirty varieties that the names are not known; besides hundreds of seedlings, some of which are of superior quality. The trees are generally healthy and bearing finely.

A number of varieties of pears are growing, and some of them doing remarkably well; one or two very good seedlings of this fruit were found.

The report was adopted.

LEGISLATIVE AID ASKED.

A resolution was passed asking the Legislature to appropriate \$1,000 annually for the benefit of the Society, to enable it to carry on its operations successfully.

Adjourned at 12.30, and the Legislative Committee proceeded to examine the specimens of fruit on exhibition.

Refreshments were served in the hall, and the Convention was again called to order at 1.30, and adjourned at 2.30, till 7 o'clock this evening.

EVENING SESSION.

Mr. Harris, from the Committee on Nomenclature, submitted quite a lengthy report on names and brief description of various seedlings.

Considerable discussion followed in regard to the propriety of fixing names to the numerous seedling varieties originated in the State.

The report was referred back to the committee, with instructions to give names to choice seedlings and report at some future meeting.

Mr. Buck took the floor, and spoke of the fifteen years experience of Mr. Hart, a fruit grower of Winona county, returning to Minneapolis and Hennepin county his thanks for the first recognition of his services by the generous premium awarded to him by the Agricultural and Mechanical Fair held here last Fall.

On motion, the chair appointed a committee of three, consisting of Messrs. Harris, Dart and Hoag, with instructions to report an order of business for next meeting, such order of business to be made known through the *Farmers' Union*.

Col. Stevens moved that the next meeting of this Society be in Minneapolis, and that it be the last of June or first of July next.

Gen. Nutting hoped the motion would prevail, as he thought there was not so good a place on the round globe as this for such a meeting.

It was determined to hold the summer meeting in this city, and the fixing of the day was left to a committee consisting of Messrs. Baker, Loring, Bates, Nutting and Elliot.

REPORT ON QUANTITY OF FRUIT.

A committee appointed to ascertain the amount of fruit imported into the State during the year 1871, made a partial report, which gave the amount of green apples imported at 100,000 barrels, at an average cost to the consumer of \$4 per barrel, making a total cost of \$400,000. Further time was given the committee to make a complete report, embracing all kinds of fruits, both green and dried.

SHADE TREES AND EVERGREENS.

The subject of shade trees and evergreens was discussed at some length.

In the matter of shade trees, the prevailing sentiment seemed to be in favor of hard maple and rock elm, the only objection to the former being on account of its slow growth. It was said that if set in the Fall, it makes a much more rapid growth. Rock elm makes a handsome tree, and grows rapidly if properly planted and cared for. Box elder is subject to borers, but is a handsome tree and can be trimmed into any shape. Soft maple has its admirers on account of its very rapid growth, besides being a handsome tree; but is very much troubled with borers and with the splitting of the limbs. Hackberry was well spoken of by one or two persons.

Mr. Brand has seen the American Chestnut 15 years old and bearing, and is of the opinion that it will do well with us. Others also spoke well of this tree. Black walnut is a good tree and bears in six years.

The best time to set deciduous trees is in the Fall or early Spring. The tops of trees should not be cut off, as it makes them unhealthy. People mistake in setting large trees. A small, thrifty tree will soon overtake one that is so large that it must have the top cut off when it is set, and the former will grow into the handsomest and most healthy tree.

With care, evergreens can be set almost any time of year. Very early in the Spring is as good as any time, if not the best. August is a good time, and in May also, when the buds begin to burst. The roots should be carefully kept from exposure. The ground should be mulched immediately after setting. Norway spruce is probably the best evergreen for shade; the arbor vitæ, for a hedge. As a timber tree, the larch is valuable.

At the close of this discussion, some resolutions of thanks were voted, and another meeting of the Society appointed to be held in Minneapolis, the last of June, or early in July. Mr. Brand presented a list of topics for discussion at the next meeting which were adopted, as follows:

TOPICS FOR DISCUSSION.

- 1st. Forest tree culture, and the varieties to be planted.
- 2d. Evergreens.—The best varieties for timber, shelter, hedging and ornament. Their culture, &c.
- 3d. Hedging.—What to use, and culture.
- 4th. Orchard cultivation, pruning, &c.
- 5th. Orcharding for profit.
- 6th. The Raspberry.—Cultivation, marketing, varieties to plant, &c.
- 7th. The Strawberry.—Varieties, cultivation, marketing, &c.
- 8th. Insects injurious to fruit; their habits; how to destroy, &c.
- 9th. Pears.—Culture, soil, and varieties.
- 10th. Cherries.
- 11th. To beautify our homes, horticulturally considered.

On motion, the President was instructed to appoint persons to write essays on each of the above topics, one person to each topic.

Mr. Buck offered a resolution of thanks to the citizens of Minneapolis.
Adopted.

President Mendenhall returned thanks to the members of the Society for their courtesy and kindness.

Mr. Hoag offered a resolution of thanks to the officers for the able discharge of their duties.

Society adjourned *sine die*.

ANNUAL MEETING AT ST. PAUL, JANUARY 14, 1873.

TUESDAY, Jan. 14.

The Society met pursuant to the constitution. On motion, Mark T. Berry, Esq., of Minneapolis, was nominated and elected Chairman *pro tem.*, unanimously, in the absence of the regular Chairman.

Mr. Berry objecting to assuming the position, on the score of want of experience, Col. Stevens insisted that there was not a better horticulturalist in all Minnesota, and that he could not be excused. Mr. Berry thereupon took the chair.

On motion, Col. Stevens was elected Secretary *pro tem.*

LIST OF MEMBERS FOR 1873.

Philip S. Harris, St. Paul.	J. T. Grimes, Minneapolis.
Truman M. Smith, "	Wyman Elliot, "
Wm Paist, "	J. S. Harris, La Crescent.
Mrs. Wm. Paist, "	M. D. Merrill, Hastings.
W. E. Brimhall, "	Wm. Cannon, Rosemount.
Lorenzo Hoyt, "	A. Stewart, Richfield.
D. A. J. Baker, "	N. J. Pratt, "
Thomas T. Smith, "	F. G. Gould, Excelsior.
L. M. Ford, "	H. E. Lowell, "
W. D. Hendrickson, "	A. W. Latham, "
Mrs. Wm. R. Marshall, St. Paul.	Lewis Martin, Anoka.
J. F. True, St. Paul.	Wm. Fowler, Newport.
W. L. Wilson, "	G. W. Frink, Montevideo, Chippewa Co.
Jacob G. Miller, "	Lewis Stone, Waterville, Le Sueur Co.
H. J. Brainard, "	O. H. Page, Pleasant Grove.
J. T. Gillmore, Faribault.	Philo Woodruff, Bloomington.
Levi Nutting, "	Robert Goodyear, Mankato.
A. W. McKinstry, "	John Frisby, "
O. F. Brand, "	E. H. S. Dart, Owatonna.
Olof Peterson, "	N. J. Stubbs, Long Lake.
John Close, "	C. P. Cook, Garden City.
John H. Stevens, Minneapolis.	Wm. Sleight, Delano.
Chas. H. Clark, "	John Sherwin, Campbell Station.

HONORARY MEMBERS, 1873.

Gov. Horace Austin, St. Paul.	O. S. Willey, Madison, Wis.
Ex-Gov. Wm. R. Marshall, St. Paul.	A. G. Tuttle, Baraboo, Wis.
Wm. Folwell, State University.	

Mr. Berry, after expressing his regret at the absence of the President, suggested that verbal or written reports from members, as per resolution adopted at the last session of the Society, would now be in order.

Mr. Harris thereupon presented the following report :

REPORT OF THE CORRESPONDING SECRETARY.

Mr. President and Friends of Horticulture:

I notice by the programme of this meeting, that a report is expected from the Corresponding Secretary. During the year since our last annual meeting there has been but little correspondence, except such as referred to making arrangements for our meetings and the soliciting of essays, etc. We are not in correspondence with any local or county society, for the reason that we have no record of such societies, or list of their officers, and I suggest that at this meeting we should pass a resolution requesting all such societies to become auxiliary to the State Society in so far as to make an annual report to it, accompanied with a list of the names and postoffice address of their officers. I think it would also prove beneficial to us to send delegates to the Winter meetings in the adjoining States of Wisconsin and Iowa. Both of those States have older organizations than ours, a larger membership, and a greater record of experience.

Last Summer I received a communication from A. S. Fuller, agricultural editor of the *New York Sun*, making inquiries about a beetle that was making destructive ravages upon the grape vines in some sections of the State, in which he expresses a desire to secure a collection of insects from us. Through private correspondence I have learned that fire blight has prevailed to an alarming extent in some sections. The crop of apples last year was somewhat less and of poorer quality than of the year preceding, but not so much so as to create any fears of final success. The exhibition of our Society at the State Fair was superior to any ever made in the State, and must forever silence the croakers, and redeem us from the reputation of being a State where the people must forever cherish the idea of sitting under their own vine and apple tree. Grape culture is extending rapidly, and Minnesota grapes have taken the front rank for their good qualities. The cultivation of flowers is largely on the increase, and I think the time is near at hand when every home throughout our State will have its flower garden. The demand for fruit trees is not on the decline, and large quantities are imported from other States, but as our enterprising nurserymen are enlarging their business, I think the demand will soon be met at home. There is also an increasing demand for evergreen, forest and ornamental trees, and the action of this Society upon them will be eagerly received by thousands who are about to plant them. I have secured an essay on evergreens, from George Pinney, of Sturgeon Bay, Wis., the editor of the *Evergreen and Forest Tree Grower*, which is a cheap, live paper that I can recommend to all who are interested in their culture.

We have in our State one paper, the *Farmers' Union*, devoted entirely to the interest of agriculture and horticulture, and I think we ought to declare it the official organ of this Society, and aid its publisher in trying to extend its circulation and writing more freely for its columns. There is talent enough with the editor and fruit growers of the State to make it equal to any journal in the Union.

Since the State Agricultural Society has given over the management of the horticultural department of the fairs to this Society, a thorough revision should be made of the premium list, that encouragement may be given to the greatest possible number of exhibitors, and a reform is needed in the report of committees. A detailed written report should be made, giving the grounds upon which A, B and C receive large premiums, and these reports should be acted upon and incorporated in the proceedings of our annual meetings, that the mass of the people may become more thoroughly educated in horticulture. The adoption of such a rule would add to the labors of the committee, but would greatly enhance the value of our annual proceedings and increase the interest in the exhibition.

As soon as practicable, a geographical, mineralogical, entomological and meteorological report should be secured from each county, and, if possible, sectional maps, showing outlines of the timber and prairie sections, also, the land and clay soils, that when a successful horticulturist takes a premium, the people may know what peculiar circumstance of soil and other circumstances have favored him. Although success is the result of knowledge rightly applied, the knowledge of how the thing is done in Houston and Winona counties might not be adapted to Hennepin and Ramsey counties.

I further suggest that standing committees be appointed upon ornithology, entomology, fruit lists, ornamental and useful trees, evergreens, orchards, vineyards and flowers, each member expected to give an individual report.

Another strenuous effort should be made to secure aid from our Legislature to enable us to scatter broadcast throughout the State the information that has accumulated on our hands.

and to send delegates to represent us and exhibit our fruits in the Pomological Convention, to be held in Boston next autumn.

The horticultural interest has largely increased the value of taxable property, and they cannot be so unwise as to starve the hen that lays the golden egg. Our State cannot do less than to lend a helping hand for the encouragement of one of the most useful and civilizing of the industrial pursuits.

In conclusion, I will allude to the Summer meeting, held July 4th and 5th in connection with the Hennepin County Society, at Minneapolis. The display of flowers and ornamental grass was a grand exhibition, surpassing the expectations of the most sanguine, and the arrangement and decoration of the hall showed that the people of Minneapolis and vicinity know how things ought to be done, and had the disposition to do it. The display of fruit and vegetables was only fair, but a very attractive feature was several plates of apples, of the previous year's growth, that were in a perfect state of preservation, a list of which is hereunto appended.

JOHN S. HARRIS.

Corresponding Secretary.

List of apples upon exhibition at the summer meeting of the Horticultural Society in Minneapolis, July 4th and 5th, 1872:

Winter Wine Sap, Golden Russet, Perry Russet, Rawle's Janet, Stone, Gilpin, or Little Red Rennet, Dominie, Limber Twig.

There was also a good assortment of strawberries, and among them a seedling raised by Mr. G. B. Wright, of Minneapolis, of a superior quality.

REPORT FROM J. S. HARRIS.

A. W. McKinstry, Secretary Minneapolis Horticultural Society:

In compliance with a resolution, passed at the last annual meeting, calling for reports from members of the Society, I prepare for you the following, according to schedule, omitting the names in the list of apples I have tried, and mentioning only those that have done the best.

I have been a citizen of this State 16 years, and have been engaged in growing and experimenting with fruit 15 years.

1. I have planted about one hundred varieties of grafted apples, more than one-half of which have proved total failures.

2. About 12 varieties of pears, viz.: Flemish Beauty, Vergaten, Lawrence, Buffum, Bartlett, Bleeker's Meadow, and others, names not known.

3. Of grapes, 16 varieties: Concord, Delaware, Diana, Isabella, Northern Muscadine, Clinton, Catawba, Iona, Israella, Eumelan, Salem, Ontario, Allen's Hybrid, Rogers' 4 and 19.

4. Of plums, Washington Gage, Bleeker's Gage, Lombard, Yellow Egg, Blue Damson; of cherries, Early Richmond and Morello; of currants, Red and White Dutch; raspberries, Doolittle and Philadelphia; strawberries, Wilson, Downer's, Green's Prolific, and Jucunda.

5. Nearly all of the varieties named have fruited, and I received last year, about 200 bushels of apples, and 100 bushels of Transcendent crabs; about 2 bushels of pears; 100 bushels currants, and 4,000 pounds of grapes. Plums, cherries, strawberries and raspberries were almost a failure.

6. The varieties of apples that have done the best with me are Red and White Astrachan, Duchess of Oldenburg, St. Lawrence, Baily Sweet, Tallman Sweet, Price's Sweet, Sweet Pear, Tetofsky, Ben Davis, Fameuse, Saxton, Little Romanite, Golden Russet, Seek-no-further, Sops of Wine, Northern Spy, and Transcendent crabs. Of these, the Duchess, Tetofsky, Red Astrachan, Ben Davis, Little Romanite and Saxton appear to be the hardiest, but the others stand well, except under very unfavorable circumstances.

Of pears, the Flemish Beauty, and two varieties with names lost, have done the best.

Grapes, Concord, Delaware and Clinton, are of the best.

Of plums, none have paid cost; cherries but little better.

The Wilson strawberry does better than any other yet tested.

Doolittle Black Cap and Philadelphia raspberries are doing the best.

7. My orchard being in a hollow, or narrow valley, is protected on the northwest and southwest by bluffs that are more or less timbered, and the ground slopes to the south and east.

8. Do not mulch except first year after planting.

9. Prune but little ; think June and November the best time ; my experience favors low heads.

10. I give the soil a thorough plowing and harrowing previous to planting, and use no fertilizers.

11. I do not cultivate later than the first of July, and grow garden stuff regularly until the trees and plants require the whole ground.

12. I have fruited a few seedlings, one a seedling of the Fameuse ; season, October ; it is large and showy, and the tree appears perfectly hardy with me ; have named it Julia. Another, a seedling of the Greening, is an abundant bearer, and a great favorite for cooking. Am not propagating trees. I will furnish scions to members of the Horticultural Society, where postage is paid.

Respectfully,

JOHN S. HARRIS.

REPORT OF PROGRESS MADE IN HOUSTON COUNTY.

Fruit growing is exciting considerable interest in Houston county, but most of the orchards are of recent planting, and are just commencing to bear. I think the crop last year would amount to about 2,000 bushels, and there are trees enough planted in the county to produce 50,000 bushels in five years ; and there will be more planted next spring than in any past year. The largest orchard in the county, as far as I am able to ascertain, is my own, at La Crescent, about seven acres. Wm. F. Dunbar has about four acres ; John Turnbull, LaCrescent, about three acres, and there are a great many plantations of from one to two acres.

The Duchess of Oldenburg, Red Astrachan, Saxton, Golden Russet and the Fameuse are doing well in all localities.

The Jonathan, Little Romanite, Seek-no-further, St. Lawrence, Prince's Sweet, Alexander, and Blue Pearmain all promise well, and there are many other varieties that have not fruited that have the appearance of being as good as any I have named.

The best pear trees I have seen are at Caledonia, about six varieties, names unknown, the property of G. Arthur.

There is probably a larger area planted to grapes than in any other portion of the State. One German in Brownsville manufactured about 2,000 gallons of wine. Most of his vineyard is not of full bearing age.

The Concord is meeting with the most favor. The first vineyards were planted with Clinton, Catawba and Isabella, but did not give satisfactory results. The business of gardening to supply the villages, is generally carried on by farmers, and as a consequence many of the markets have a very irregular supply of small fruits and vegetables. There is a growing taste in the cultivation of flowers and the planting of ornamental trees and shrubs.

JOHN S. HARRIS.

LaCrescent, Minn.

After the reading of these reports, which were listened to with much interest, the Chairman called for other reports.

Judge Baker asked if the reports were the property of the Society.

The President answered in the affirmative.

Judge Baker then suggested that the discussion was open to all present, and he hoped, therefore, all would participate in it.

Mr. Elliot, of Minneapolis, then read a report prepared by Mr. John Hart, of Winona, as follows :

WINONA, Jan. 10, 1873.

DEAR SIR:—The following is an answer to the questions asked in circular:

Summer apples—Red Astrachan, Red June, Duchess of Oldenburg, Early Harvest, Early Joe, Early Red, Keswick's Codlin, Primate, Sops of Wine, Summer Pearmain, Golden Sweet, Early Pennock, (twelve varieties.)

Fall apples—Dyer, Saxton, Jefferson County, Calvert, St. Lawrence, Ramsdale Sweeting, (six varieties.)

Winter apples—Hawley, White Pearmain, Lowell, Roman Stem, Rambo, Dr. Sylvester, Early Settler, Limber Twig, Newton Spitzenberg, Fameuse, Monstrous Pippin, Ben Davis, Seek-no-further, Perry Russet, Jonathan, Wine Sap, King of Thompkins County, Dominie, Golden Russet, Winona Chief, Janet, Rossa, Price's Sweet, Yellow Bellflower,

Vale's No. 3, R. I. Greening, Blue Pearmain, Red Gillyflower, King of Minnesota, Drap de Ore, Sweet Cider, Minkler, Haas, Grime's Golden, Smith's Cider, (thirty-six varieties), making in all fifty-four varieties I have in cultivation, of which thirty-six varieties have borne fruit.

Pears (eight varieties; six have fruited.)—Buffum, Beurra Giffard, Beurra Easter, Belle Lucrative, Flemish Beauty, Lucy Ford, Jersey, Duchess de Angelo, Glouth Moncau.

Grapes (eight varieties.)—Concord, Clinton, Delaware, Hartford, Isabella, Northern Muscadine, Taylor, White King.

Plums—two varieties, names not known.

Cherries—two varieties, names not known; bore fruit for 10 years.

I have several varieties of apples, names unknown. I fruited about twenty-five varieties of seedlings, none of which are as good as the Early Harvest, Red Astrachan, Duchess, Fall Stripe, Snow Apple, Yellow Bellflower, Jonathan.

Yours,

JOHN HART.

Mr. Stewart, of Richfield, next made a brief report. He had sandy soil, and on a prairie at that. He commenced in the Spring of 1855, in Le Sueur county, with 100 varieties. He did well until 1858, when his trees were mostly killed. He next moved to the vicinity of Minneapolis, and put out 15,000 grafts, and the next year all were killed but a few. He believed that the common apple would do. We needed hardier stock, and seedlings at that. He had since done well, had fine Duchess of Oldenburgs and several varieties of the crab.

Mr. Paist suggested that, as the hall was hard to speak in, he hoped all would speak as loudly as possible.

Col. Stevens said that as there were not many present, the reports for the afternoon should be conversational as far as possible; indeed, that the whole meeting should be "free and easy" in character. He would like to hear, in that spirit, from everybody present, and especially from visitors to the Society, from abroad.

Mr. Ford thought that as it would be mostly repeated to-morrow would it not be better to have the fruits on exhibition itemized for the press to-morrow morning, something, he suggested, as more profitable than mere talk.

Col. Stevens said that not many were here now, on account of the snow blockades on the railroads, and therefore there should be nothing done which would cut them off from the debate which would be very full to-morrow.

Judge Baker did not see the necessity of any regular report at all. We were here to confer together. There would be 200 here to-morrow, and if some of the members of the Legislature were here, who were engaged in fruit culture, even if there were such as had raised but a single apple, it would benefit all to hear from them. He desired Mr. Fuller, of Olmsted county, whom he saw present, to respond to the desire for information.

Mr. Fuller said that most of the people of his county were wheat growers, but that latterly they were paying some attention to fruit growing. He himself was originally from New York, and had gone into crab apple culture somewhat, and had on 80 or 90 trees some 12 bushels. His experience had been on level ground, protected on all sides by a growth of willows.

Mr. Smith desired to call the attention of the Society to the postal law, which he suggested bore hard upon those who wished to send a few scions through the mail. He said there ought to be concerted action to get the old postal law, which was more liberal, back again.

Col. Stevens said that by the late action of Congress the grievance was done away with; the old law had been, or would be restored.

Mr. Harris desired to hear from members of the Wisconsin State Horticultural Society—Messrs. Tuttle and Willey—who were present.

Mr. Smith interposed, and expressed a desire for the Society to wait until to-morrow, when more members would be present to get the benefit of what the gentlemen from abroad might put forward.

Mr. Willey said he should like first to hear from the Society itself. He came here to learn something as to the varieties of fruit grown in all portions of the State.

Col. Stevens proposed to invite the gentlemen from Wisconsin to seats by the side of the President.

Mr. Tuttle objected; he, too, came to look on and learn, and his present seat, therefore answered all purposes.

Reports being again announced as in order, Judge Baker called on Mr. Elliot especially, for a verbal report.

Mr. Elliot briefly replied, that, not expecting to be called upon for a report, he had little to say further than that he had raised, the past season, about 120 bushels of crab apples of various varieties. His soil was sandy, which restricted his efforts, it not being so good for fruit as clay. His strawberries had been a good deal killed, although currants and raspberries had done very well. The Philadelphia he considered the finest raspberry in cultivation.

Mr. Harris here presented a report from Mr. Thomas T. Smith, of Mendota, on Transcendent Crabs, as follows:

ST. PAUL, January 10, 1873.

A. W. McKinstry, Recording Secretary of Minnesota State Horticultural Society:

The following is my answer to your circular of December, 20, 1872:

1. Utter's Cooper, English Golden Russet, Early Joe, Westfield Seek-no-further, St. Lawrence, Sops of Wine, Wine Sap, Limber Twig, Northern Spy, Blue Pearmain, Sweet Pear, Tallman Sweet, Saxton or Fall Stripe, Tetofsky, Duchess of Oldenburg, Red Astrachan, Ben Davis, Haas, Fameuse, Perry Russet, Plumb's Cider, Alexander, Wealthy, Soulard Crab, Transcendent Crab, Marengo Crab.

2. Flemish Beauty.

3. Delaware, Rogers' No. 4, Rogers' No. 15, Creveling, Concord.

4. Currants, Raspberries and Strawberries.

5. Duchess of Oldenburg, Transcendent Crab, six bushels.

7. Yes. By a belt of oaks on south. Ground slopes to north, northwest and west.

8. No.

9. No experience.

10. Plowed and harrowed.

11. Last cultivated on July 12th; hoed afterwards whenever weeds appeared. Raised cabbage, onions and root crops; currant bushes also in orchard. With the exception of Transcendents and a few Duchess, my orchard was planted last Spring.

Respectfully yours,

THOMAS T. SMITH.

Mendota Township, Dakota county.

MONEY CREEK, Minn., Jan. 13.

A. W. McKinstry,

DEAR SIR:—Being unable to attend the Horticultural meeting at St. Paul, this week, I will send you a brief statement of my experience in fruit growing.

The varieties that I have planted are Duchess of Oldenburg, Red Astrachan, Early Red, and Sops of Wine, for early varieties; Fameuse, Saxton and Sweet Pear for autumn varieties;

Ben Davis, Perry Russet, English Golden Russet, Tallman Sweet, Rawle's Janet, for Winter varieties. These varieties I consider are hardy enough for Minnesota. Other varieties I am testing, such as Northern Spy, Carolina Red, June, Bailey's Sweet, Calvert, but I am not fully prepared to say whether they will prove hardy with me or not.

Of the varieties of Pears. I planted the Flemish Beauty principally, although I have one or two other varieties which I am testing.

Of Cherries—I planted Early Richmond.

Of Plums—Fall Egg, German Prunes.

Grapes—Concord, Clinton and Delaware.

Small Fruits—Doolittle Black Caps, Houghton's Seedling Gooseberry; Wilson's Albany Seedling, Green's Prolific, Downer's Prolific, and Jucunda Strawberries.

My standard apples are young, and have not fruited much yet. Wilson's Albany Strawberries and Doolittle's Raspberry fruit well with me, also, Houghton's Seedling Gooseberry, and different varieties of currants. My orchard is not protected much; trees that I set around it are young yet; not much slope to the ground. I mulch thoroughly with barnyard manure in the Spring; prune in the months of June and July. My experience favors low headed trees; cultivate them with a corn cultivator until about the middle of July, usually grow a low hoed crop in my orchard. Have not fruited any new seedlings.

Yours truly,

M. C. BONNELL.

Mr. Smith, of St. Paul, in making a verbal report, said he had been engaged thirteen years in fruit growing in Minnesota, principally in grapes and apples. Many of his apple trees had borne seven years. One point he had learned was, that variety had much to do with successful fruit growing in Minnesota. He had tried all varieties nearly, and he placed the Duchess of Oldenburg as the best. He said that the old objection was, that the fruit dropped from the trees almost as soon as ripe; but we had them here to-day as perfect as possible. They were not so good for eating as for cooking. But if he had but one tree give him the Fameuse. He named others that had done well; the Ben Davis, the Golden Beauty, and others. He had also grapes—sixty varieties—and he had not failed to ripen them in thirteen years. But it took care and labor. They cost more here than elsewhere. In small fruits he had not done so well. He placed Seneca Black Caps, at the head of the black raspberries. Of the red, the Clark was first for quality. The Philadelphia was an enormous bearer. In blackberries he had tried all he could hear of, but only the Western Triumph had appeared to stand. Two gentlemen near St. Paul had succeeded finely with blackberries, raising seven or eight varieties, and growing large quantities from the wild fruit, and he would recommend the Society to look into the case. They grew them in sandy soil. In strawberry culture Wilson's stand at the head. The Jucunda had, with him, been perfectly worthless. Of cherries, he preferred the Early Richmond, his trees having done well. Pears had done well until troubled with the blight. Of apples he had raised one hundred bushels. He had shipped grapes to Iowa, to Philadelphia and New York, he thought about two tons. He had raised altogether about four tons. He considered the Delaware the best grape for all purposes whatever. He had picked them from the vine, hung them up in the cellar and kept them until March. They were the best variety, he repeated, for eating, for wine, for keeping, and all else for which grapes could be used. A child would, if allowed a choice, pick out the Delaware in preference to all others, its flavor never cloying anybody. He had eaten them this season almost ever since August. It was the best grape for the masses to grow.

He could not accept old country notions in regard to grape culture, and although the Delaware did not stand the hot sun so well on account of the thinness of its leaves, it was an enormous bearer and would always bring a good price. To raise good grapes requires constant culture until the fall. Indeed, they could not be grown here for less than twenty cents per pound. He can grow strawberries at ten cents per quart as well as grapes at twenty per pound, or wheat at eighty cents per bushel. Grapes require great skill in culture; even professionals spoil grapes. Old country laborers would do their own ways, and he would not advise anybody to plant as a beginning, more than a few vines. But he would advise all who had a rod of ground only, to plant a few vines at least. His soil was on the bluffs of the Mississippi, and a clay soil on lime rock was to be preferred to any other. The ground should be worked eighteen inches deep. It was a laborious undertaking, but they would last years after we were gone. The grape needed deep drainage. If planted shallow they might, the first year, do well, but in a dry spell they would drop their fruit. In reply to a question put by Col. Stevens, he said it took fifteen pounds of grapes to make a gallon of wine, and wine could be produced more cheaply in a southern clime: but if we wanted good fruit and fresh, we must grow grapes here. They were paying eighty to ninety cents for California grapes, which, it was true, were larger, but they were not better than ours. He did not think fruit growing a money making business, but then a man must take pleasure in his work. He had seen blueberries sell here in St. Paul for twenty cents per quart, when you could not get that for raspberries, and he had shipped abroad more grapes than he had sold here. St. Paul really took little interest in these matters. They would not come into this hall to look into things for themselves, when they could come and look on for nothing; but they would stop him on the street to inquire how they could grow grapes.

Mr. Harris endorsed Mr. Smith's views. He, too, had seen wild fruits, blueberries, selling for fifteen cents, when grapes would not bring that price. He did not believe in the Delaware, however, except on a clay soil, and he could not recommend it generally to the people. He thought that for Minnesota the Concord grape was the best of the two. He therefore, disagreed with Mr. Smith on that point, and people from Iowa and other States took the same view in relation to the matter. The crab was the forerunner of all fruits here, and we should, therefore, be grateful to it. It prompted efforts in all branches of fruit culture besides. He believed the Transcendent Crab was the leading fruit amongst apples, and he thought the same of the Concord amongst grapes.

Mr. Smith said he merely spoke for himself in preferring the Delaware. He could name other varieties he liked, but he put the Delaware at the head.

Col. Stevens called on Mr. Gould, of Excelsior, who had been successful with grapes, to give his experience as to their culture, and Mr. Gould said that he agreed with Mr. Smith as to the value and success of the Delaware as a popular grape. He, however, thought more of the Iona, as the flavor was more spicy. The Delaware had proved hardy with him, and he had been

very successful with it. He also spoke highly of the Concord. His soil was clay with a limestone subsoil, or basis. His vines would generally set more fruit than they would ripen. The best fruit upon which to educate the people, as was suggested by Mr. Smith, was the Transcendent Crab, until they could raise something better. He had grown, in a single season, 1,500 pounds of grapes. The best variety of raspberry was, in his opinion, the Seneca.

Col. Stevens asked Mr. Gould for his experience about mulching.

Mr. Gould said that last year he lost about 1,000 trees on a southern slope, and he had never practiced mulching. If he could have four inches of snow that was the best thing of all. Last winter was his first bad experience in root killing.

Mr. Smith instanced some nursery man in Vermont, who had had extraordinary success with orchards by grafting altogether on crabs, his trees selling for \$1.00 each, where others brought only 25 cents. He mentioned this for the benefit of the Society.

Mr. Ford asked for something more specific about mulching, and hoped the idea advanced by Mr. Gould would not go out.

Col. Stevens said that the trouble had appeared always with the roots, not the limbs of the trees, and his experience had been that trees not mulched died, and those mulched did not. On sandy soil it was constantly his experience that mulching was needful.

Mr. Chas. H. Clark said mulching was an advantage in keeping the frost back in the ground, and preventing the tree from coming forward too soon, thus helping it; and that trees most exposed and on highest grounds were hardiest.

Mr. Lowell was called on for a verbal report.

Mr. H. E. Lowell said his experience was that grafts should be put upon hardy seedlings, on trees of native growth; they would stand the climate when no others would. He commenced the culture of fruit some 18 years since, and had tried trees from all parts of the country, and he believed in mulching until the tree was thoroughly established.

The next report was from Mr. Mark T. Berry, as follows:

I have the following kinds of apples and crabs that are bearing:

Transcendent, Hyslop, Montreal Beauty, Soulard, Lady Crab and Transparent.

Of standards that blossomed, and a part of them fruited the past season, I have the following kinds:

Duchess, Fameuse, Haas, Ben Davis, Perry Russet and Wine Sap.

I also have some of the following kinds on trial; they are from one to eight years old. I have had them from one to five years:

Red Astrachan, Red Romanite, Kirkbridge White, Jonathan, Benoni, Tallman Sweet, Wagoner, Grimes' Golden, Keswick Codlin, Alexander, Bellflower, Fourth of July, Red June, English Golden Russet, Early Harvest, Limber Twig, Sweet June, Fulton, Fall Orange, Sweet Romanite, Calvert, Tetofsky, Stark, Blue Pearmain and Walbridge.

Of the kinds that I have had the longest time, I would recommend the Haas, Ben Davis, Fameuse, Perry Russet, Red Astrachan, and Calvert, as proving the hardiest. I now have about 120 of them set out, and over 100 Transcendents and Hyslops in bearing, besides the small crabs.

Of plums, I have some very good seedlings.

Cherries—Early Richmond, Morello and Carnation in bearing.

Currants have done very well.

Gooseberries—Houghton's Seedling has done well.

Grapes—Concord have done the best, so far, with me. Delaware, and Matthews' No. 13, on trial.

Raspberries—Doolittle and Davidson's Thornless. The Davidson I consider the very best for an early kind, as well as hardy.

I would advise full mulching with coarse manure, and thus prevent the trees starting so early in the spring. I have found June the best time to prune.

I would also advise leaving them low headed, as they will thereby withstand the heavy winds and heat of summer better.

MARK T. BERRY.

Mr. Harris hoped the Society would recommend some particular grape, the Delaware or the Concord as a popular grape. We had had many reports—let us report something specific.

Mr. Smith objected to this course, as it would put a weapon into the hands of tree holders, as a means of injury to the community.

Col. Stevens said that applications to him, from all parts of the State, making inquiries where to purchase hardy fruit trees, showed that the supply was not equal to the demand.

Mr. Smith differed with Col. Stevens in this opinion.

Mr. Clark wished to notice the idea that some one had advanced, that the Legislature was not willing to help the Society. As a member he did not think so. He thought the Legislature was quite willing to aid it and countenance it in all practical ways. He agreed with Col. Stevens, that there was not a stock of trees large enough in the State to supply the farmers, and that as soon as stock sufficient was grown here, the farmers would buy it.

Mr. Harris now moved that the Society adjourn to meet at 7 o'clock this evening, which motion was carried.

Adjourned.

EVENING SESSION.

Mr. Harris, as Chairman, called the meeting to order.

On motion, the reporter of the *Farmers' Union* was elected Secretary *pro tem*.

The Chairman next called for reports, as in order; stating in reply to a request for information, that by a resolution of last winter, members were requested to present a verbal or written report of whatever was of interest in relation to fruit growing.

Mr. A. C. Hamilton, of Winona, reported that the farmers around Winona, belonging to the Society, had not had as many meetings as heretofore; and that they had not gone in for seedlings as much as some elsewhere. He did not think, from his experience, that more than one seedling in twenty was worth cultivation; and he had seen seedlings killed in the same orchard alongside of grafted fruit that survived. We had a fine grafted fruit on the table here to-night, and had not to wait for experiments with seedlings. He had 150 varieties, and was on a strife with Mr. John Hart as to number of varieties. He would ultimately have as many as any one else. A few good

varieties was all that was wanted. He did not think the Society should report or advocate any one variety, but after letting all give their experience, then let the people try experiments. He had as good a shelter for an orchard as anybody in the State, for it was sheltered on all sides, except on the east. He could raise the Yellow Bellflower and the Baldwin, but he did not believe they would grow on the prairie.

Mr. Truman M. Smith gave his experience with plums, and could recommend the Magnum Bonum, Jefferson, and Wild Flower as the best. One winter some were killed, but generally they had proved hardy.

Mr. Hamilton had tried plums of various kinds—the Imperial Gage amongst others, and they had done well. He would like to hear something about the pruning question to-night, as he could not be here long.

Mr. Smith said he had a gardener who insisted that he could grow plums every year, by pruning back two-thirds, and mulching with horse manure. He could not tell, as yet, whether the plan would work.

Mr. Harris related that on one of the islands of Lake Erie, a German had raised plums successfully every year, when all his neighbors failed, and he insisted that his success was owing to the fact that he hung his trees with all the old horse shoes and other pieces of old iron he could procure. It was stated that his trees were loaded down with iron as well as fruit.

Mr. Hamilton had heard that driving nails into trees would sometimes help their growth.

Mr. Smith remarked that the trouble with him was the trees dropped their blossoms prematurely.

Mr. Smith called for the Society's experience with the growth of quinces.

Mr. Harris had had such experience, and could succeed with care enough in covering them.

Mr. Smith had succeeded with quinces by sprinkling salt around the trees. He believed that our soil lacked salt, hence his success.

Mr. Harris—consulting the order of questions in the programme, inquired whether there was any plum which would take the place of our present wild plum?

Mr. Elliot had tried the Imperial Gage and Washington Gage, and failed with both, and had next sent for twelve varieties, failed with all. They would grow up one year and be killed the next. He had tried as many as thirty or forty varieties, of the native kinds, and had now about four varieties which seemed to do well. The Harrison Peach Plum was a fine one, and the Harrison Red was a good plum. The Cherry Plum was a constant bearer. He had known it for fifteen years and it brought the best price of any in the market.

Mr. Tuttle, of Wisconsin, in referring to the remark of some one present (Mr. T. M. Smith) that wheat at eighty cents per bushel had better be raised than grapes at twenty cents per pound, did not agree with that conclusion. He believed in the grapes when he could make \$300 per acre by them at five cents per pound.

Mr. Smith said he would give \$500 per acre if any one would take care of

his grapes properly, in that space of ground. He would defy any man to take up and lay down his vines at a less cost than ten hours work on a grape vine.

Mr. O. F. Brand submitted a verbal report of his experience in various lines of fruit culture, but often spoke too indistinctly to be heard by the reporter in a hall acknowledged to be badly calculated for speakers.

Mr. Ford discussed at some length the "killing of trees on the south side," thereof giving his experience, particularly with the Mountain Ash, which, procured from the neighborhood of Lake Superior, had proved with him a failure.

Mr. Hamilton said that the Germans had a simple and effective way of dealing with this difficulty; that they placed slabs against the trees to protect them from the too hot sun. He could not afford to wind them elaborately with bands of hay or straw, but slabs were cheap enough. A man of his acquaintance protected them with heaps of earth, but sometimes they were killed by the hot sun of March. He believed in mulching after the ground was frozen.

Mr. Tuttle believed that trees were killed by the heat of Summer; that the trees flattened and contracted on the south side, whilst the growth elsewhere went on. He believed in putting up the board in Summer; that then the mischief was done. This was the view of the case and the practice in Georgia and South Carolina. He believed in low-topped trees, as a protection to the body of the tree. He had experimented in the case of a tree injured by the sun, and cured it of incipient decay by putting up a board, and he believed that the mischief was mostly done in Summer. He believed thoroughly in low trees.

Messrs. Smith and Hamilton were inclined to endorse Mr. Tuttle's views on the subject.

Mr. Ford expressed himself perplexed by contrary opinions expressed by gentlemen.

Mr. Tuttle believed little in old theories concerning the killing of trees by frost, but he thought one tree would stand a degree of cold that readily killed another. He could not believe in the rupture of the sap vessel in the way popularly believed, but he thought no one could tell exactly how a tree was killed.

Mr. Cook made a verbal report concerning his experience in fruit growing. He had about five acres in crab apples. He had fruited the following varieties: Duchess of Oldenburg, Solomon's Sweet, Golden Russet, Saxton, Fameuse, Sweet Pear, which appeared hardy enough, and had about three bushels of the Duchess. Some of the trees had been set seven years. Raised 20 to 25 bushels of apples. He had one Flemish Beauty pear tree, five years old, growing finely. He had cultivated four kinds of grapes this season, and all seemed to do well. Also several varieties of raspberries.

Mr. Elliot moved an adjournment to 10 o'clock to-morrow, pending which motion, Mr. Hamilton suggested that a committee on the new constitution and by-laws be appointed, and after considerable debate, Mr. Elliot, Mr. Willey and Mr. Brand were appointed said committee.

Mr. Smith moved that the Legislature be invited to attend the meeting of the Society, along with the Governor, which was unanimously agreed to, and the time was then set for to-morrow evening. A committee was then, on motion, appointed to give such invitation, consisting of Messrs. Ford, Elliot and Smith.

Mr. Hamilton remarked that the Germans in the State raised grapes in abundance along with their children, and cheaper than did Mr. Smith.

Mr. Smith said that grapes could not be grown in Minnesota, as you would grow grass. He said that even very smart men otherwise, could not grow grapes, because they would not study how to do it. Grapes must have great attention in this northern climate.

Mr. Ford wanted to know what disposition was to be made of all this matter of to-night, whether it would be repeated to-morrow, if so, he wanted to say a word about it.

A member called on Mr. Tuttle for his views.

Mr. Tuttle said that according to his observation and experience, fruit growing paid better than wheat farming—that this was the case even with grapes. He, himself, had five acres in grapes. His grapes last year cost him very little. Most of them did well last year. There was a vineyard in his neighborhood he would place against any vineyard in America for perfection. The grapes were grown at five cents per pound, and, he repeated, they considered the growing of grapes more profitable than the growing of wheat. Years ago, the farmers did not like to live where they could not grow fruit, but now they had found out their mistake. He had no doubt, from what he had heard at this meeting, that Minnesota would do as well as Wisconsin. He had grown apples for 15 years, and had never lost a crop yet from the frost. As to grapes, according to the best calculation he could make, the cost of growing them, aside from the boxes, was not more, even, than one cent per pound.

Mr. Smith wished to know how many vines a man could prune and lay down in a day.

Mr. Tuttle thought he could thus handle about 200 in a day.

Mr. Smith said that, in his vineyard, they would only do from 40 to 70 in a single day. There was a difference in pruning. He had made his statement to bring out the needful information as to the cost of culture. He had not learned yet how much the cost of labor would be per day. He would still insist that he could grow wheat, at 80 cents per bushel, cheaper than he could grow grapes at 20 cents per pound, and he could grow two pounds of strawberries cheaper than he could grow one pound of grapes.

Mr. Ford thought that grapes ought to be grown cheaper than 20 cents per pound; and he instanced a German, near by, who raised Concords at 15 cents, and Isabellas at 10 cents per pound. He gave the figures as to his sales, and reckoned the product at \$700 per acre. He thought that too much culture could be put upon both wheat and grapes, so as to make either profitless; and grapes would have to be raised in a cheap way. He thought that the German referred to, although some of his vines did not do well, was quite satisfied.

Mr. Smith suggested that the grapes thus sold were not good grapes—were not such as could be considered marketable.

The Chairman *pro tem.* suggested that this discussion on grapes was premature, and was overlapping on to-morrow's programme, and that it had perhaps better be postponed in favor of the regular plan of proceedings.

Mr. Harris wished to read a note from the Secretary of the State Horticultural Society, addressed to the Society here, introducing Messrs. Tuttle and Willey. The note was then read.

Mr. Harris then moved that the two gentlemen named be constituted Honorary members of the Minnesota Horticultural Society, and be invited to take part in the proceedings, and the motion was adopted.

The Society then adjourned to 10 o'clock, Wednesday morning.

WEDNESDAY MORNING.

Meeting was called to order by the Vice-President as chairman.

Col. Stevens proposed to continue the reception of reports, which was agreed to, and the chairman called for any such, verbal or oral. The Secretary then read the following reports :

REPORT FROM JOHN W. SLEE.

OAK GROVE NURSERY,
DUNDAS, Rice Co., Minn., Jan. 5, 1873.

To the Secretary of the State Horticultural Society:

DEAR SIR :—In reply to questions asked in your circular of December 20, I state as follows:

1. Varieties of apples—Fameuse, Ben Davis, Perry Russet, Jonathan, Limber Twig, Uter's Cooper, Esop's Spitzenberg, (winter). Red Astrachan, Duchess of Oldenburg, (summer.)
2. Pears—Flemish Beauty, Bartlett.
3. Grapes—Concord, Delaware, Catawba, Elsinburg, Hartford, Clinton.
4. N. Y. Bleeker, Miner.
5. Grapes—Amount raised, 25 bushels.
6. Best, Concord.
7. My orchard is a cool, gentle slope to the north, between the bluffs east and south, and entirely surrounded by second-growth timber, thirty feet high.
8. I mulch all Summer with green weeds, grass, etc., gathered when cultivating and hoeing.
9. I plant 16 feet apart; prune high in June. Close planting and long bodies are my fancy.
10. I plow only in hot weather; twice if possible; use no fertilizers but rotten wood and leaf mould.
11. Cultivate as long as the weeds grow. Grow corn, potatoes and vegetables; never grass, or small grain.

Have been setting trees for three years past; have fruited none as yet; set two-year-old trees in preference to any other.

MY CATECHISM.

I believe better grapes can be grown in Minnesota, than in New York or any State north-west of it. I believe that any kind of apples will grow here that grow in the Western States. I believe that in ten years our apples will be in demand in eastern markets, and grade there as our flour and wheat does this year.

I consider timber soil more favorable than prairie soil. I think when planted on prairie they should be on clay or gravel soil, in good heart and tilth, and planted close, for mutual protection. The worst enemies to orchardists are pocket gophers. Strychnine in a raw potato is sure death; put in the hole in early spring. For rabbits, put heaps of green brush

outside of garden to attract them and trap mice. Keep the ground clean of rubbish in winter, and a shock of corn at each corner, and never kill a weasel.

Respectfully yours,

JOHN W. SLEE.

REPORT FROM H. W. MENDENHALL.

RAPIDAN, January 4, 1873.

1. Apples—I have planted Duchess of Oldenburg, Golden Pippin, Golden Russet, Perry Russet, Stewart's Sweet, Fameuse, Saxton, Ben Davis, Tetofsky, Ross, and several other varieties of grafted fruit; all doing very well. About 25 seedlings, from four to eight years old. Two of them fruited last year. Have grafted more tender varieties on crabs; they are doing well.

3. Grapes—Concord, Delaware, Hartford Prolific, and Rogers' No. 15 and 8. Pruned close, laid down and covered in the Fall.

4. Plums and small fruit—One large blue plum tree, doing well; do not know the name. I have grafted several varieties of Minnesota plums. Raspberries—Doolittle's Black Cap, Davidson's Thornless, Philadelphia, and a yellow raspberry obtained from the woods. Propagates from the tip same as Black Cap. A very good variety. Strawberries—Wilson's Albany, Hooker, Lenning's White, and Brooklyn Scarlet.

5. All the above are doing well.

6. Apples—Raised about fifteen bushels of apples.

7. Protected some on the south and northeast, but none on the west and northwest. Gentle slope to the east.

8. I do not mulch, but wrap the small trees with papers to keep the rabbits from eating the bark.

9. Prune in June, and head about four feet high.

10. Manure with stable manure.

11. Cultivate as long as there is a weed to be found. Cultivate with kitchen and flower gardens; do not allow weeds or grass to grow.

12. Two varieties of seedlings have fruited; season, October and November. One of them is nearly as large as the Golden Russet; color, yellow; not quite so tart as Duchess. The other is a little larger than the Transcendent; flavor, about as the Saxton.

About eight miles southwest of Mankato, on Blue Earth river.

H. W. MENDENHALL.

Mankato, Blue Earth county, Minn.

WINONA, Minn., Jan. 12, 1873.

A. W. McKinstry, Recording Secretary:

DEAR SIR:—Not being certain of being able to attend the annual meeting at St. Paul, which occurs on the 14th inst., I will answer the questions very briefly, which have been sent out.

1. "What varieties of apples have you planted?" This question I will not attempt to answer in full, for two reasons: First, I do not know exactly, and then I do not wish to lead others astray by trying too many kinds. I have in my orchard over 150 varieties, not all fruited as yet. My location is good; has both northeastern and southern exposures; good clay soil; snow stays on the ground all winter to protect the trees from so severe freezing. I will give the list here which I would recommend for general planting and for market purposes; and one word here: All who are raising apples in Minnesota for market, I would advise them to set but few varieties and a good number of each, so that if he has an order for 100 barrels of fall apples from a St. Paul grocer, he can fill the bill with one variety, and the same with Summer or Winter fruit. For Summer use—Yellow Harvest, Harvest Sweet or Spur Sweet, Tetofsky, White Astrachan, Red Astrachan, Carolina June. For early Fall use—Duchess Oldenburg, Fall Wine Sap. Later—Price's Sweet, Fameuse or Snow, Summer Rose, Haas, St. Lawrence. Winter—Golden Russet, Perry Russet, Ben Davis, and one or two varieties of the winter crab apples which are raised by P. A. Jewell, of Lake City, for each and every orchard. There are many others which I might mention—which I will not—for general cultivation, for the reason that I think the public generally had not better be the ones to experiment. Let the few who wish to do it learn for the rest, and report after a fair trial.

2. Pears—Flemish Beauty does well and is good enough; others may do, but it has not failed yet with us.

3. Grapes—Concord, Delaware, Hartford, Prolific, and the Rogers varieties are good enough, and do well with us.

4. Plums, cherries and small fruits—Plums have not been tested to my satisfaction, yet

there are a number of varieties doing well here, but the names I do not know. Those I do know do very well. They are the Imperial Gage and Lombard. Cherries—Early Richmond and no others. Small fruits of nearly all kinds do well.

5. This question I cannot answer in the space I have, and it is not necessary. I can say my trees are so far doing well, and fruiting as well as I can expect when so young.

6. My answer to the varieties to set out, answers this question as well as I can answer it, although others have done well.

7. My orchard is in a ravine, protected from the southwest and north, and has an eastern exposure. Have all kinds of slopes, small ravines, etc., adapted for almost any variety of trees.

8. Sometimes I mulch; and when I do I generally do it when the snow is on the ground in February or March, with straw manure.

9. Would prune in the season of blossoming, and then but very little low-headed trees.

10. Common manure, plowed in the ground early in Spring. Use some kind of a hard crop in the orchard.

11. Would not cultivate any after August 1st.

12. Have paid but little attention to the growing of seedlings. In fact, have but one in my whole orchard which I know to be a seedling, and that is small, sour, and good only for cider, as most all other seedlings are. I have run over this list very rapidly, and have not given myself time for thought in this matter, or I could perhaps have arranged it more satisfactorily to myself and to you. In conclusion, would say I hope you will have a grand good time at the meeting, and that new ideas will come up, and new methods which will be of use to all who are in the horticultural business, or amateurs.

Yours truly,

A. C. HAMILTON.

MR. KINNEY'S REPORT.

MORRISTOWN, RICE CO., MINN.,
January 6, 1873.

A. W. McKinstry:

DEAR SIR:—You requested that I should give you a few items with regard to my success in growing small fruits. Three years ago last spring I purchased of A. M. Pusely, of Palmyra, New York, quite an extensive variety of small fruits, in order to satisfy myself which would prove most profitable in Minnesota.

For strawberries—Michigan Seedling, Kentucky, Jucunda, Napoleon III., Niconor, Ida, Green's Prolific, Downer's Prolific, Colfax, Romney's Seedling, Early Scarlet, Wilson, Dr. Nicaise, Triumph de Grand.

These I have given careful cultivation in hill and mulched row system, three feet between the rows, and from 12 to 15 inches between the hills.

I have not had a large bed of any of the above varieties, for the reason that I wished to test the merits of each kind before planting largely. The ground slopes gently to the north.

Thus far I have not mulched or given any winter protection.

We picked 15 bushels strawberries last season. Of the yield, I will place Michigan Seedling first; second, Colfax; third, Niconor; fourth, Downer's Prolific, Ida, Wilson, Early Scarlet, Krommer's Seedling. These five varieties about the same. Triumph de Grand, is a very good flower berry, but rather soft to market at a great distance. The Ida—this is a rank grower, tall and stout, can plow close and not soil the fruit. I was well pleased with it. Next to Kentucky it held its place the longest; and the last seemed the nicest berry I ever tasted. This was the testimony of many who ate of the fruit. Krommer's Seedling is not a very large berry, but is of a dark color, flesh blood red, and first class. Downer's Prolific has done well; shall set largely of this variety. The Michigan Seedling is rather of a sour berry, good size, rank grower, easily kept in hills. From a single plant kept in hill one year, the second year they have averaged 18 good fruit trusses, and one quart to a hill was not uncommon. The berry is softer than Wilson, but I like it for general cultivation; it is easily tended, and has borne two good crops. The same hills look vigorous, as though they were good for another crop. The Niconor is quite a firm berry, much sweeter than the Wilson; is a good yielder; has given the best of satisfaction thus far. Colfax is a good yielder, good size, very acid unless very ripe; it is then good to eat from the vines but too soft to market. Kentucky and Napoleon III. promise fair; have not tested them long enough to speak with confidence about them. Triumph de Grand, on very rich ground, and kept in hills, is profitable to set.

Of raspberries, I have cultivated Mammoth Cluster, Seneca Black Caps, Philadelphia,

Doolittle, Improved Kirtland, Clark, Golden Cap, Golden Thornless, Naomi, Purple Cane, and Davidson Thornless.

This list has all proved hardy with me except the Clark; that kills to some extent. Laid down the canes last fall.

The past season the raspberry bushes were three years old, and for large yield, large fruit, and fair quality, the Mammoth Cluster was the best thing I had. The pickers would, when the fruit was in its prime, average a quart each in five minutes (average diameter of the berry three-fourths of an inch.) The plants are large and strong; planted six feet between rows, and three and a half between hills. After first year, pinched back the new growth when 18 or 20 inches high. This makes the stalks grow large so that they do not require stakes. I cultivated with a shovel plow enough to keep the ground clean. Mammoth Cluster, with me, has not borne much till the third season. Next in order I will place Seneca Black Caps. This I pronounce the very best Black Cap grown. The berries are larger and sweeter than the Doolittle, and if left longer on the vines than the Doolittle, they do not lose their sweetness; are rank growers; better to cut back well the first year's growth, till it gets a large root; must be done in the Fall or early part of the Winter, so it will not bear too much till the roots get matured. The Philadelphia—this variety yielded enormously; bushes bent to the ground; rather soft for market; but for canning purposes are excellent. The flavor, when taken from the cans, we pronounce excellent. The berries lasted four weeks, and they blossomed about that length of time; during that period the bushes were covered with the honey bee at a time in the Spring when there is not much for them. I noticed that this variety and the Purple Cane, which comes earlier than the Philadelphia, were the favorite sorts for bees. Golden Thornless, a large, yellow raspberry, a native of Minnesota; splendid looking berry, a good yielder, but not very sweet; Purdy says, "good for canning or to dry." Golden Cap has done well with me. It has to be cut back the first year; a fair yielder, very sweet, and of a yellow color. Doolittle and Davidson Thornless yielded well.

I had 35 bushels of raspberries. I have decided to plant largely of the Mammoth Cluster, Seneca, Philadelphia, some Doolittle, some Golden Cap, and Golden Thornless.

For grapes I cultivate Concord, Delaware, Hartford Prolific, Iona, Isabella, Catawba. The Isabella I pronounce worthless; the wood is too tender. Hartford Prolific, Concord, Delaware, yielded finely, and Iona did tolerably well. The vines are three years old, grapes very fine. I lay the vines down and cover with dirt, about November 10th.

Perhaps a little history of my experiments with blackberries will prove interesting.

Ten years ago I purchased a few Saxton blackberry roots. They killed down every Winter. Three years ago, last Fall, I took up some of the roots and set out in my garden; covered the roots in the Fall; they came up next Spring. In the Fall I loosened the dirt, on one side of the hill, bent them down, covered about one or two inches dirt over them. In the Spring took a pitch fork and run under the canes, raised them up, and placed a little more dirt around them. That was one year ago. Last season the rows all lived but were not matured enough to grow fruit. I buried them again, and last season had as nice blackberries as I have ever seen. This season the canes made enormous growth; have laid them down again. I pushed down the tops with a spading fork, and stuck the fork into the ground till the bushes were covered. They are quickly covered. Have some early Wilsons that I treated in the same way. The fruit promised abundant but dried up. Shall mulch all of the blackberries in the season.

The berries, over and above cost, netted me about ten cents per quart.

I feel confident that each garden can have blackberries in abundance by covering with soil.

Last spring I set some cranberry vines in my garden, on dry land, and mulched with three inches of sawdust. They made about three inches of growth, and bore a number of berries; was not troubled with weeds; can tell better about their success another season. I shall set some more next spring. Cranberry vines require moist or wet land. The sawdust kept the ground moist, at the same time I got a good growth of new vines. I tried the vines without sawdust and made a failure. It requires time to determine the success of this enterprise, but I feel encouraged.

I cultivate an orchard of 440 apple trees partly amongst small fruit. Varieties—Ben Davis, Perry Russet, Duchess, Jonathan, Fameuse, Haas, Saxton, Autumn Strawberry, Tetofsky, Wine Sap, Catharine Local, Transcendent and Hyslop Crab, Gould Crab. Part of the orchard just coming into bearing; about six bushels last season.

The above are all planted on what was timber land, sheltered from north and east.

Respectfully yours,

SETH H. KINNEY.

REPORT FROM J. H. THOMAS.

YOUNG AMERICA, Carver Co., January 7, 1873.

I fruited six kinds of grapes last season. The Delaware was the best, and the least damaged by any disease. The Iona was affected in leaf, with mildew, light. The Concord and Hartford about the same. Clinton bore very light for strength of vine, but clear of any disease, and the other kind I do not know the name of, but it ripened about the 25th of August; very musky, but by the 5th of September became very sweet, and lost most of its muskiness; the vine light in size, leaf five lobed, lighter than Concord, wood short jointed; not protected since planted, and no part of the vine was hurt by frost. I expect to fruit ten or twelve kinds next season.

Yours,

J. H. THOMAS.

REPORT FROM N. J. STUBBS.

In the spring of 1871 set out 100 trees in my orchard of the following varieties: Perry Russet, Ben Davis, Wealthy, (Mr. Gideon's seedling), Plumb's Cider, Haas, Sops of Wine, Alexander, St. Lawrence, Fameuse, Jefferson County, Duchess of Oldenburg, and a few crabs. None but the latter have fruited yet. Orchard on high ground, sloping to the north. Clay subsoil near the top of the ground. Trees all perfectly hardy, except St. Lawrence, Fameuse and Jefferson County; end of limbs damaged a very little the present winter by the severe cold weather. Cultivated the ground well in potatoes and beans. Think June and July the best time to prune, as the vitality of the tree at this time is the most active, and all scars will the more readily heal at these times. The same spring and following one, planted out in nursery, on southern slope, the following named varieties, their hardiness coming in order as named:

Winter varieties—Golden Russet, Perry Russet, Allen Russet (Peffer's seedling), Ben Davis, Blue Pearmain, Tallman Sweet, Walbridge, Seek-no-further, Northern Spy, Rawle's Janet, Pewaukee (Peffer's).

Summer varieties—Wealthy (extra hardy), Fall Stripe, Plumb's Cider, Haas, St. Lawrence, Fameuse, Duchess of Oldenburg, Hyslop and Transcendent crabs, Red Astrachan, Alexander, Sops of Wine, etc.

Highly cultivated; no mulching; no appearance of fire blight, or any disease but leaf-lice.

Pears—Planted Flemish Beauty, Clapp's Favorite, Annas de Eta. The last year's growth being all killed this winter, the Flemish is the only pear that I can recommend.

Cherries—Early Richmond, perfectly hardy in any location.

Grapes—Have planted Delaware, Concord, Clinton, Rogers' No. 15, Eumelan, Iona, Croton. Hartford Prolific, and Salem. Have fruited none but the Delaware and Concord. They are the grapes for the millions.

Raspberries—Planted Doolittle, Mammoth Cluster, Seneca Black Cap; very hardy and prolific.

N. J. STUBBS.

Long Lake, Minn.

REPORT FROM HENRY STUBBS.

To the Friends of the Horticultural Society, assembled at St. Paul:

The following is a report of my experience in growing fruit trees in Minnesota, as requested by circular:

In the Spring of 1857, I had 42 apple trees sent me from the East. I cleared off a new piece of ground, slanting to the south, and planted on clay subsoil. The varieties were, namely: Michael, Henry Pippin, Rhode Island Greening, Mendenhall Sweet, Trenton Early, Newark Pippin, Summer Pearmain, Ortley Pippin, Wine Apple, Sweet Bow Apple. The winters were too rigorous; they killed down to the ground for four years, and finally all died except seven trees. They have grown up with bushy tops branching out at the ground. Six have fruited, and seem very hardy: Newark Pippin, Mendenhall Sweet, Summer Pearmain (very hardy) and Ortley. Have cultivated the ground in corn most of the time.

The same Spring (1857) I planted apple seed, and the result is, I have 10 seedlings already fruited, and others that will soon bear. My prize apple, size above medium, of an oblong shape, strawberry color, sub-acid in flavor, and keeps till mid-winter. Winter Greening, below medium in size, very brittle, cooks quick and keeps till April; very prolific. Fall Orange, size medium, yellow, with blush on one side, grows in clusters; very valuable fall apple Maiden Blush, a *fac simile* of the standard bearing that name, in almost every respect, keeping longer. Winter Sweet, very good keeper, and rates with Tallman Sweet in flavor.

Red Oak, hardy apple, very hardy, valuable for cider, sharp tart. I am propagating all of my seedlings and have a few thousand for sale, as well as other varieties. I think they will compare well with many of our standard apples, and perhaps much more hardy. Age of my seedlings, 14 years; have been bearing three years, some of them.

Bought of P. M. Gideon, in 1865, 100 trees. Set out in new ground, on eastern slope, sowed down in timothy, according to Mr. Gideon's advice, which proved a sad mistake for the benefit of the trees. Many of them were destroyed by mice and some winter killed. The varieties were the Saxton, Blue Pearmain, Tallman Sweet, Winter Wine Sap, Duchess of Oldenburg, Limber Twig, Early Red, Rawles' Jennette, Fameuse, Fall Sweet, Hubble, Fall Orange, Forville, Golden Russet, Red Bellflower, Red Astrachan, Seek-no-further, King of Tompkins County, St. Lawrence, Culvert, Red Gillyflower.

Have fruited Duchess of Oldenburg, Tallman Sweet, Red Bellflower, and crabs. Others will bear soon; probably one-third dead. Plowed up the ground some three years since, and am now cultivating the same. Have never mulched any; think cultivating is much better.

The varieties that seem most hardy—Red Astrachan, Fall Orange, Limber Twig, very hardy; Early Red, good; Blue Pearmain, very hardy; Fameuse, good; Red Bellflower, good; Tallman Sweet, very hardy; Winter Wine Sap, good. My experience in pruning is quite limited. No protection. Cultivate potatoes and beans in my orchard, and endeavor to head low.

Plums.—Have some native varieties of large red and late yellow; very valuable.

I respectfully submit the above report to the public.

Truly yours,

HENRY STUBBS.

Mr. C. B. Sheldon, of Excelsior, had cultivated grapes in Minnesota sixteen years. He has had Catawba, Isabella, Iona, Rogers' No. 15, Delaware and Concord for fourteen years past. Had succeeded in ripening the latest of these—the Catawba and Isabella—with the exception of two seasons.

Mr. J. T. Grimes, of Hennepin, was called upon for a verbal report, and although not prepared, he would make a simple statement of facts. He had fruited the Duchess, Red Astrachan, Ben Davis, Tallman Sweet, Haas, Fameuse, Saxton, Tetofsky, Pomme Gris, King of Tompkin's County, Porier, and Early June also. As to bearing qualities, he could not speak positively, except as to three or four varieties. Tetofsky, Duchess and Fameuse are good bearers. If he had but one he would select the Fameuse. The Red Astrachan was a shy bearer with him; in four years he had but one good crop from it. He had grown the crabs. The Transcendent and Hyslop were good bearers, and over 100 bushels had brought one dollar per bushel. As to pears he had fruited none. Of grapes, the Clinton, Concord, Delaware, Oporto, the White Clinton and Moffit's seedling. In regard to grapes, he believed, first, from general planting, in the Concord as a good grower and abundant bearer, more so as to the age of the vines than any other. For a table grape, the Delaware. With reasonable protection they are hardy enough for our climate. The Delaware when laid down, did well. The birds took the Delaware in preference to any other larger. The birds first took the worms, then the fruit, and regarding them as friends, they did not even scare them away. Of plums he had only done well with the wild plum. He had fruited the Miner, but it did not suit the climate, being too late, and he did not consider it much better than the wild plum.

Of cherries, the Early Richmond, the Carnation, and the Morello; but had not found them profitable. Excepting in one season, he had not succeeded enough to pay for the ground occupied. The frost seemed to kill the buds. Those under the snow, on the limbs, fruited, and those exposed did not. The trees—of those killed—seemed gradually to die.

Of strawberries, a speciality. He must have tried between 30 or 40 kinds, and had fallen back on the Wilson, the Green Prolific, and Downer's Prolific. His soil was loam, with clay subsoil.

Of raspberries, he first tried Doolittle Black Cap and had now Purple Cane, Philadelphia, the Cardinal, Mammoth Cluster, Seneca, three varieties of Arnold's hybrids, the Clark and Davidson's. For profit, on the list, he would take the Doolittle first: for later growths, the Seneca, Mammoth Cluster, and Philadelphia. For yellow berries the Golden Cap.

Mr. Grimes, in reply to Col. Stevens, said he had never been able to supply the demand for fruit in Minneapolis, and had never left any at the stores, or had any left over. The demand always exceeded the supply. Of currants, for profit, I would grow the old-fashioned Red Dutch, and for a white currant, the White Grape; then for exhibition, the Cherry and Versailles.

Mr. Harris asked whether it wouldn't be better to raise wheat at 80 cents and buy raspberries at 10.

Mr. Grimes always got 25 cents for his.

Mr. Harris said he would rather raise the fruit at five cents per quart than the wheat at 80 cents per bushel.

Mr. Grimes' orchard was protected only by trees, timber and brush on the north, his locality being a high table, and no direct slope, but rolling. For orchard purposes, he believed in a high elevation. He would never select a slope, and if obliged to, would never get one towards the south. His reason was, that the thermometer, at his place, did not fall by four degrees as much as further off in low grounds, and it did not rise so high by four degrees, or so. There was a less change, by eight degrees, than in low grounds. It was the sudden changes that effected the trees. We must have an equal temperature. He would therefore avoid a southern exposure. He read a letter from a gentleman in Brunswick, Maine, who had an orchard on the north side of the hill. He lost no trees at 40 degrees below zero in his location, whilst others, with a southern exposure, lost all their trees. If he selected a slope, it should slope towards the north, and he would have it protected from the winds as much as possible. His grounds were protected on the north and west by timber.

As to mulching, he did mulch, usually, late in the Fall or early in the Winter, according as work permitted. The object of mulching was to protect the roots from sudden changes of temperature. He also wrapped his trees sometimes, especially the small ones. He commenced with dry hay and twisted it around the tree. A boy could wrap 100 trees in a day. When asked "How old a boy could do that?" Mr. G. said "as 'old a boy' as himself." (Laughter.) It was necessary to give the tree a good depth, and they would not be so likely to die out. Small trees sometimes were killed down to the snow line, but finally survived, grew up and were never killed afterwards.

As to pruning, he did but little; but save him from long-bodied trees in this climate.

Mr. Ford asked the reason for that practice.

Mr. G. said he had tried refraining from pruning, and that was his experience. The top was a protection to the tree itself.

Mr. Hamilton had noticed that the most upright trees had suffered most from frost.

Mr. G. did not see that that weighed anything as a reason.

Judge Baker would rise to a point of order. There was our old friend, who lives close by, Gen. Nutting, who should be fined for not being here yesterday to give in his wide experience.

Gen. Nutting was willing to pay the fine, but he wanted to hear more about high and low trees.

Mr. Ford gave his experience about the Tetofsky. [Here a thundering noise about the stove prevented the reporter catching what was said about the Tetofsky.] We caught it that the last bore very well.

As to plums, his Miner had been badly killed one year, and he got disgusted, but it had since done well, and appeared in a general way to be hardy. Last year they did not get ripe till about frost. He wanted to hear more about plums, particularly about the "wild goose plums." He had had little success with that fruit, and had about given up on pears. He had observed, in regard to pears, that most of those of his neighbors had been killed. Of strawberries, he had about discarded all kinds, but had done best with Green Prolific and Wilson. He gave further experiences in regard to small fruits.

Mr. Smith wanted the experience of Mr. Ramsden in growing and keeping the Duchess, such as we saw on the table.

Mr. Ramsden said he kept them sound by picking them carefully from the tree and packing them in layers of sawdust over ice, then afterwards packing them in barrels. He raised them near Stillwater. He had 125 Duchess trees and 22 Tetofsky, without a blemish on them, and they were both high and low. He preferred the high, because he could get around them best. Have made good cider from Transcendent crabs. Think the advantage of the Duchess is, we can get it into market before they can bring anything from below to compete with it. Have about 500 trees growing, and from 125 to 150 bearing. He raised about 200 bushels last year. He raised 150 to 200 bushels of apples per year. He did not mulch at all. His land had clay subsoil.

Mr. Brimhall was called upon for his experience. He did not believe in mulching, although he did believe in low-headed trees. He gave a list of trees he had in fruit. The best were the Saxton, Duchess, Plumb's Cider, Fameuse and Golden Russet, Tetofsky and Haas. He commended the Saxton highly as a thrifty, hardy tree, which fruited every year. The Duchess bore so abundantly that he had to pick off the fruit in advance, to save the trees. With pears, he had had no success.

Of grapes, he believed in the Concord as a grape for everybody, and next, the Delaware. He had had no tame plums that had been hardy. They were like pears—would make a big growth and be killed back. He had raised some cherries, Early Richmond and Morello, but did not consider them a success. His orchard is not protected much, and his bearing trees were on rather a southeastern slope, but he considered they would do as well on level ground.

He pruned in June and the first part of July. He plowed deep in cultivating vegetables. Of raspberries, he had, of seedlings, the Reserve. The raspberry needs a moist soil. He considered the black the most profitable for the market. Of strawberries, he considered the Wilson the most profitable for market.

Mr. Ford called for reports from committees.

The Chairman said that reports were first in order this morning, but it had been decided to return to the current debates which we had fallen into. As to reports, that of the Corresponding Secretary was really first in order.

Mr. J. F. True, of Ramsey county, was called upon for a verbal report, but declined as having had no time for preparation.

The Chairman called for reports from committees.

Mr. Harris presented his report as Corresponding Secretary.

Judge Baker moved that the report be laid upon the table for future consideration.

Carried.

Col. Stevens said that a few weeks since, Col. Sweet, of the Northern Pacific Railroad, handed him a specimen of fruit, and as Col. Sweet was here present, he should like to hear from him. The fruit was to him entirely new.

Col. Sweet said it was a shrub that grew upon the Missouri river, in great profusion and in clusters. The berry, resembling red currants, remained on the twigs until February. The tree, or bush, was thorny. It grows mostly on the bottoms, but to some extent on the bluffs. It is called the bull berry. It is hardy, evidently. The berry has been used for jellies and pies, and makes very good ones. The shrub would make an excellent hedge plant. They—his wife and others—used it regularly for pies, and it is sub-acid in taste. The Indians use them to a considerable extent also, and travelers along that route used them sometimes. Some of the jelly was on the table, and could speak for itself as to quality. He was satisfied that it was a valuable plant. He believed that from a single quarter section, 2,000 bushels might have been gathered. They commence ripening the 1st of August, and stay on the tree until the 1st of February. The soil was of various kinds where they grew.

Mr. Grimes said that the plant was known to horticulturalists as the Buffalo berry.

Col. Stevens said it was a mistake that it had been pronounced upon by eastern horticulturalists, who could not place it as yet. One-half of the shrubs produced alternate years.

Judge Baker suggested that a committee be appointed to look into this matter.

Judge Baker then said that if more members had been here yesterday, it would have been his pleasure and his duty to have welcomed them, but the weather had interfered, and it was the pleasure of the people of St. Paul still, to welcome all connected with the Society. He hoped now those not here yesterday would report themselves, that they might be assigned quarters.

A motion was then made and carried to adjourn to 2 o'clock.

WEDNESDAY AFTERNOON.

President Dart took the Chair, and called the attention of the meeting to the omission of an essay by Judge Baker—passed over.

The Committee on Constitution and By-Laws presented the following report, which was accepted through Mr. Elliot, its Chairman :

CONSTITUTION OF THE MINNESOTA STATE HORTICULTURAL SOCIETY, ADOPTED
AT THE ANNUAL MEETING, JANUARY, 15, 1873.

ARTICLE 1. This Society shall be known as the Minnesota State Horticultural Society.

ART. 2. The object of the Society shall be to collect, condense, and collate information relative to all varieties of fruit, and dispense the same among the people. Any person interested may become a member by forwarding to the Treasurer, or Secretary, the annual fee of one dollar.

ART. 3. Its Officers shall consist of a President, one Vice-President from each Congressional District, a Secretary, Treasurer, and Executive Committee of three.

ART. 4. The President shall preside at, and conduct all meetings of the Society, and deliver an annual address, and in his absence the Vice-Presidents, in their order, shall perform the same duties.

ART. 5. The Secretary shall record all the doings of the Society, collate and prepare all communications, etc., for the public press, and pay over all money received from members, or otherwise, to the Treasurer, on his receipt; shall receive and answer all communications addressed to the Society; establish and maintain correspondence with all Local, County, District, and State Horticultural Societies, and secure, by exchange, their transactions, as far as possible; to aid the President as an executive officer, in the dispatch of business relating to meetings of the Society, and notices of Horticultural and similar meetings of general interest, and report to the annual meeting of the Society an abstract of the matter that has come into his possession, which, with its approval, shall become part of its transactions for the current year.

ART. 6. The Treasurer shall collect and hold all funds of the Society, and pay out the same only on the order of the Secretary, countersigned by the President.

ART. 7. The officers shall be elected separately and annually, by a ballot vote, and hold their office until their successors are elected.

ART. 8. Every member shall be entitled to two copies of the transactions of the Society, as often as the same shall be published.

ART. 9. The President, Secretary, and Executive Committee may call a meeting of the Society at any time and place they may consider advisable, by a notice of thirty days in the public press.

ART. 10. The President, at each annual meeting of the Society, shall appoint a General Fruit Committee, consisting of one member from each Senatorial District in the State, and it shall be the duty of each member to report upon the fruit crop in his respective district, and it shall be the duty of said committee to report annually a limited list of fruits best adapted to general cultivation in the State at large.

ART. 11. The Society shall hold annual sessions on the third Tuesday in January, and other meetings at such time and place as the Society may direct.

ART. 12. By-Laws and alterations in the Constitution for the purpose of meeting further wants of the Society, may be enacted by two-thirds of the members present at any regular meeting.

Judge Baker moved to pass upon it in sections, and a debate then ensued upon the sections, in order of their being taken up. It was adopted after slight amendments.

Col. Stevens presented a communication from Senator Baxter, which he desired to have read. It was ordered to be read by the Secretary, and covered a bill providing for the incorporation of the Society, and for other purposes.

Col. Stevens explained the matter. The bill submitted by Senator Baxter was unconstitutional. He had been a member of both branches of the Legis-

lature, and all efforts in that direction had hitherto been vetoed. He had charged that the members had been derelict. In this he seemed to be mistaken.

Mr. Davis moved that a committee of three be appointed, with Col. Stevens as chairman, to prepare such a bill as would be acceptable.

Col. Stevens, as chairman, with Messrs. Baker and Elliot were then appointed such committee.

Judge Baker then moved that the thanks of the Society be presented to Senator Baxter for his efforts in behalf of the Society, and expressing the hope that he would continue them.

Carried.

A member remarked that there was understood to be in the hands of some one there, a communication from Mr. C. M. Loring. Moved that it be read, and the motion was carried. The Secretary then read the following letter from Mr. Loring:

MINNEAPOLIS, Jan. 11, 1873.

Hon. R. J. Mendenhall, President Minnesota State Horticultural Society:

DEAR SIR:—It is with regret that I have to announce my inability to meet with the Horticultural Society at their annual meeting. I have, unexpectedly, been called upon to attend to some business matters that will take me away from the city for some days, perhaps weeks, and I assure you it is a great disappointment to me not to be with you.

I feel that it is the duty of the friends of the Society to meet at least once a year, to discuss the questions of interest to the Society, and to learn from each other's experience how to lay our plans for the coming season.

I wish the people of the whole State could have the benefit of the experience of the men who will be present at this meeting; and they can have it, if the Legislature, which is now in session, will appropriate the small, very small sum, in proportion to the benefit to be received, of \$1,000 for printing and distributing the report of the transactions of this meeting, and I would suggest that a petition be presented to the Legislature, setting forth the advantages the State will derive from the publication of these reports, and asking that the bill now before the House, providing for such an appropriation, be passed.

Our State Horticultural Society is not so large as it should be. It has not kept pace with the rapid development of the State; and why? The answer is plain. It has not received encouragement nor aid from any source since its organization. Its members are poor. They have struggled along alone, working, watching, waiting for the results from the trees, seeds and vines which they planted years ago, until they have demonstrated the fact that in this Northern State, of which it was said that nothing but small fruit would grow; that apples, pears and grapes, of the finest quality, can be raised here, and that it pays to raise them.

The Society, heretofore, has not given that attention to horticulture which it deserves. The cultivation of plants and flowers has grown to be a business of considerable importance in the State. In this city alone, there are no less than five greenhouses, and as many more in St. Paul, where plants and cut flowers are sold, and the supply of the latter has never been equal to the demand.

There is hardly a town of any importance in the State where the business would not be profitable for at least one greenhouse, and it is a business particularly adapted for ladies, giving pleasant and profitable employment.

I would suggest that the Society appoint a committee on greenhouses, who shall report at each annual meeting, the number of greenhouses in the State where plants and flowers are sold, and the aggregate amount of sales each year, and I will make the following proposition:

I will place in the hands of the Treasurer of the Society the sum of \$100, provided the Society will appropriate a like amount, to be given as premiums to the three best greenhouses in the State that are conducted entirely by ladies, the awards to be made by the committee on greenhouses at the next annual meeting. \$100 to the lady having the best collection of plants and the best conducted greenhouse; \$75 for the next, and \$25 for the next, the ladies wishing to compete for the prizes, to notify the Secretary of the Society previous to

November 1st, 1873. I know of two ladies in the State who are engaged in the cultivation of greenhouse plants, and I hope there are many more. Who can think of a more delightful or profitable employment?

Hoping this annual meeting will be largely attended, and that large numbers of new names will be added to your membership roll, I remain,

Very truly, your friend,

C. M. LORING.

Judge Baker moved that a committee of five be appointed to act upon Mr. Loring's proposition, that portion of it needing action by the Society.

Carried, and Messrs. Baker, Hamilton, Harris, Brand and Stewart selected as such committee.

Mr. Harris said that at the last meeting of the Society a committee consisting of himself and Mr. Elliot, were appointed to recommend flowers (annuals) for general cultivation, and with the leave of the Society, he would now present such report. Read, and a motion made to adopt, pending which, Judge Baker hoped the list presented would be debated.

Mr. Ford doubted the ability of anybody to present a suitable list. Still, he agreed with Judge Baker; he would like to hear the matter talked up.

Mr. Harris explained that the list was comparatively a brief one. The committee did not expect to make a list that would be complete or perfect in any sense, such as the Society could absolutely adopt.

Mr. Elliot also explained. He admitted, in replying to Mr. Ford, that roses needed protection. There were but ten kinds that were hardy in the State, but it pays every lover of roses to take care of them, and he was not disposed to ignore all those that were not hardy and adopt inferior varieties. He wanted to have a good rose, even if it needed extra care, rather than a poor one that was extra hardy.

Mr. Smith said that out of three hundred varieties he had failed to find any one perfectly hardy.

Judge Baker explained, and deprecated an attack on the committee, such as Mr. Ford had made.

Judge Baker wanted a good history of plants, and such as were most desirable to be recommended.

Mr. Harris read a portion of the report once more, and the committee he said, had been careful to name only those most easily procured and within reach of all.

Mr. Cannon declared his belief that roses could be grown to advantage in Minnesota. That, at least, was his experience.

Mr. Ford again explained. He did not believe in fancy plants, but in the substantial.

Col. Stevens moved that the list presented by the committee be adopted.

Judge Baker moved that the report be laid upon the table, to be called up at some future time.

Adopted.

Mr. Harris explained that Mr. Jewell, who had been expected to deliver an essay, had been compelled to leave the country and go south, on account of the ill-health of his wife, and expressed his regret at the occurrence and the

subsequent disappointment. The subject was to have been "Nursery Tree Culture," comprising the best methods of making hardy trees along with the use of manures.

Mr. Tuttle, being called upon for information as to hardiness of trees, considered that trees were much injured by encouraging a too late growth. A tree may be even loaded down with fruit, and yet, on examination, it will be found that decay has been going on. Trees do not finish their growth before they get to bearing. They required age before bearing. We want in Wisconsin, as they did here, a few hardy trees, instead of so many doubtful varieties. Give trees a hardy body and hardy root and they were all right. Mr. Tuttle had found that very many tender varieties of apples would do well for a few years, but eventually prove quite tender. The Northern Spy was considered hardy in Wisconsin, for a number of years, but he now classed it among tender trees. He had been surprised to see trees classed as hardy in Minnesota that were considered half hardy in Wisconsin. Fall Stripe was one of them.

In reply to an inquiry, he said the Ben Davis was a good bearer and did well. He considered the Baldwin a tender tree. He said they were not much protected from severe weather by the lake (Michigan.)

Mr. Hamilton desired Mr. Tuttle to give a list of what he considered hardy varieties. He himself raised Baldwins, but he did not think he ought to recommend it, because his location was particularly a favorable one.

Mr. Tuttle considered the Duchess and Red Astrachan as good varieties—the latter one of his best bearers. The Fameuse was best for early winter. The Early June was the best for an early apple, and stood at the head of apples; but it was a poor grower, and could do nothing under four years. It ripens as early as the Red Astrachan, and was a very desirable apple. They were also hardy. It was a medium-sized apple, with some pink about it. He had done nothing to enrich the soil of his orchard. He did not believe in manures for orchards. All good fair lands, clay and loam, would do for fruit. In regard to protection, he believed in full tops, and the protection of the trunks against heat, either by hay bands, or something of the kind. Fissures were apt to open at the junction of the limbs with the trunk, in a severe winter, and burst the tree asunder where the limbs spring from the tree in a cluster. The limbs should be distributed up and down along the trunk. Most orchards were neglected whilst small, because they did not look to be of much importance, where if larger they would be taken care of. He cared little for tops to begin with. The Tetofsky he spoke highly of as a good annual bearer. He would name six varieties, two for Summer, two Fall, and two Winter: For Summer, Tetofsky and Sops of Wine; for Fall, Duchess and St. Lawrence; for Winter, the Fameuse and Golden Russet. There is nothing that takes the place of the Fameuse as a good apple to keep over. He had had them in the very best condition on the first of March. He did not consider the Ben Davis as an established fruit in Wisconsin. As a keeping apple, he considered it very good. It was yet doubtful, and sometimes passed by another name—the Gay Deceiver. The English Golden Russet he

considered unrivalled as a good apple. He saw no reason why an inferior apple should be grown, when apples of good quality could be raised.

Mr. Clarke said he had seen Rawle's Jenette in hands two months later than any other variety.

Mr. Tuttle said he had not mentioned that, because he was interested in it, but he considered it the best apple for all purposes grown. The Pewaukee was also a good apple; that came in after the Fameuse. No one wanted more than four or five varieties, if they only followed each other properly. He said that full half of his orchard had never been of any profit at all. He believed that his orchard of Fameuse had averaged three barrels to the tree for years, 150 barrels to the acre, and in ten years, at 10 cents per bushel, it was better business than corn at 50 cents. Fruit was higher now than it was ten years ago. He had then seen apples at \$1.50 per barrel in Milwaukee and Madison, and last year he sold some apples at \$6 per barrel.

Mr. Clark said that Mr. Tuttle had stood questioning very patiently. He would ask how long an orchard needed cultivation.

Mr. Tuttle, in reply, said it was needed all the time; that a tree all the time needed new wood. The surface of the ground ought to be broken up, and grass and weeds kept down. To check the growth of the tree and produce fruit, he would prune in June. It would then have time to heal before Fall, and especially did it sometimes seem good in case of young orchards. He would leave the cut for eight or ten days before covering it with a coat of paint, which left no difficulty afterwards.

Mr. Harris wished to say something about propagating to the best advantage, whether by budding, grafting, or any other way. He himself had an idea, that for Minnesota, if they could get a stock of hardy trees, it could be accomplished by budding or grafting. He was no professional nurseryman, but he wanted information. Nurserymen, elsewhere, took off their stocks very often from the same soil, and whether the elements needful for the tree were exhausted was a question. Perhaps it was so that manures did not answer all purposes in replacing what was taken off. He wished some of the nurserymen present would contribute information on the subject.

Judge Baker moved that Mr. Baxter be added to the committee on Legislation, and Mr. Clark was nominated by Col. Stevens.

The motion was carried.

On motion the Society adjourned to 7 o'clock this evening.

EVENING SESSION.

The Society was called to order by the Chairman, Vice President Dart.

Mr. Truman M. Smith was nominated and elected a member of the committee to learn the quantity of fruit raised and consumed in the State.

Mr. Smith suggested that as many of the members of the Legislature were present, the Society would doubtless be glad to hear from them.

Mr. Ford hoped that they would indeed hear from such gentlemen present.

Judge Baker hoped the Secretary of the Wisconsin Horticultural Society, Mr. Willey, would favor them with his views of what constituted progress in Wisconsin. By a vote he was formally invited.

Mr. Willey said he hardly knew what he could say that would be of interest. A number of years ago the Society then undertook to get donations from other portions of the United States, and they received about 2,000 specimens of all kinds of growths.

[Here it having been noted by the Chairman that the President of the State Agricultural Society was present, he was, on motion, formally invited to take a seat on the platform.]

Mr. Willey resumed. They had had abundant donations, and everything looked promising at one time, but the Society was poor, and the State could not help them, and so the enterprise fell through. But after all he might say that in one sense the undertaking was a success, because others took up the movement, and of the trees contributed, many survived and progressed greatly in the end. The trees fell to the Agricultural College of the State afterwards. That institution was a very great success, and students were, in large numbers taking a regular agricultural course. Mr. Willey further gave an interesting account of the workings of the Agricultural College, and said he considered it an honor to the State. Mr. Willey was listened to with very particular attention and respect, and what he thus advanced evidently made a strong impression.

The next thing in order was an agricultural address by Col. Philip S. Harris, of the Land Department of the Lake Superior and Mississippi Railroad. Col. Harris then addressed the Society as follows:

ADDRESS.

Mr. President and Members of the Minnesota State Horticultural Society:

It is with feelings of profound pleasure and consciousness of the honor conferred upon me, that I address you on the present anniversary of your Society.

The annual meeting of an association of intelligent men, whose chief aim is the advancement of a science, or industry, which has for its direct object the present and prospective good of an entire community, should excite a deep interest in the minds of all thoughtful men, and insure their hearty and sincere co-operation.

That great benefits are to be derived by the State at large from the labors of an association of this character, with its numerous auxiliary societies, or those having a similar object, scarcely admits of doubt, and no argument will be required to show that every individual resident in the State is indebted either directly or indirectly, in a greater or less degree, to the labor and means which have been expended, and the information which has been expended by you as individuals, or as an association, in developing what will, in the not distant future, become an important branch of industry, and add largely to the wealth of the State.

The consideration of the objects of this association in its relations to the prosperity of the State admits of a wide range, and though it is scarcely

necessary before an audience so well informed, to trespass upon your time and patience, by a detailed history of Minnesota, with her vast natural resources and unparalleled progress in internal improvements and agricultural development. such reference will only be made to those points as will serve the better to illustrate the general subject under consideration.

In addition to this (without attempting an elaborate essay) a sketch will be given of the progress of horticulture, viewed more as an adjunct to agriculture, than as a separate branch of industry, with some of the causes which retard its progress—the influence of horticultural associations, and the means of extending the same; closing with a few brief remarks on the discouragements and failures of former years, so that from the lessons of the past, fresh encouragement may be found for renewed effort in the future.

The commanding geographical position of Minnesota, located in the centre of the North American continent, midway between the Pacific and Atlantic oceans, and midway between Hudson's Bay and the Gulf of Mexico, has long been recognized.

Its eastern shore washed by Lake Superior (the western extremity of the chain of great lakes,) forming direct water communication from Minnesota to the Atlantic seaboard and the ports of Europe—the Mississippi—Minnesota and St. Croix rivers forming internal avenues of communication from nearly every part of the State to the Gulf of Mexico and the Red River through British America to Hudson's Bay.

It is not necessary to argue the advantages over all other routes to the Atlantic seaboard of railroad communication from San Francisco, or Puget Sound to the head of Lake Superior, (destined to be the great continental highway for the transportation of the products of the immense territory tributary to Minnesota,) or to refer to the efforts, now making by the different railroads completed within the State and stretching out westward, to intercept this traffic, and carry it over her territory.

You are equally well aware of her large and valuable mineral deposits of copper, iron, coal, granite, sandstone, slate, etc., and that, although the branches of industry have as yet received but little attention, they only await the employment of capital and skilled labor to become the prominent features in the business of the State. The manufacturing facilities of the State have, ever since its earliest discovery, been the theme of each traveler and historian; and the Falls of St. Anthony, the St. Croix, and the St. Louis rivers, are as familiar as a "twice told tale."

Add to these advantages, an exhilarating climate, a soil of great fertility, groves of hard wood, and vast forests of pine timber, easily accessible to the axe of the woodman, broad sweeping prairies, beautiful lakes, gleaming in the rich sunlight, numerous streams threading from every point of the compass on their way to the sea, and a picture of attractions is presented—excelled by no State in the Union.

Need we wonder that, following the proclamation of Governor Ramsey on the first day of June, 1849, population poured into the State with unexampled rapidity, and that the fatal spirit of speculation took possession of the people?

Cities sprung up as if by magic; villages dotted the face of the country as by the wand of the enchantress, and wild schemes for future profit absorbed, to the exclusion of all else, the minds of the inhabitants.

Each individual was a speculator in the wildest sense of the term.

Our forests of pine timber, immense mineral resources, valuable water powers, the rich broad acres that awaited but the labor of the husbandman, to shower their wealth into his hand,—all were as undisturbed by the progress of development, as when the Indian tribes roamed over the country in undisputed possession.

But over the spirit of these dreams came a change as sudden as it was terrific.

In the great financial crash of 1857—these wild hopes of prospective wealth vanished as the baseless fabric of a dream, leaving almost in beggary those whose faith was strongest in the future.

But the energy and pluck of her citizens were proof against even such an emergency, and that which would have crushed and disheartened men made of less sterner stuff, but roused to full vigor, the hitherto dormant energies of the people, and with the determination to allow no misfortune to prevent Minnesota from taking the rank due her position and advantage, they girded themselves anew for the contest, and from the ashes of their dead hopes has arisen a development which to-day challenges the admiration of every State of our Republic.

Previous to this time, as before stated, while millions of rich acres lay uncultivated, breadstuffs for the necessities of the population were imported, and the progress immediately thereafter was, with the sparse population, slow, so that the cultivation of the soil can hardly be said to have begun before the year 1859.

To show clearly the agricultural development of Minnesota, I append the following statistics, compiled in the Department of State.

Wheat being the chief cereal, the statistics of that crop alone, are referred to :

Years.....	1860.	1865.	1869.	1872.
Population	172,022	250,099	420,000	527,500
Acres in Wheat.....	231,357	471,401	1,006,007	1,460,000
Bushels.....	5,101,432	9,475,000	17,660,467	26,000,000
Bushels per acre.....	22.05	22.70	17.55	17.75
Bushels per capita.....	29.65	37.88	42.05	49.29

If these estimates of the productions of 1872 are to be relied on, and there is no good reason to doubt them, Minnesota will rank as the *third* wheat State in aggregate production, the *second* in yield per acre, and the *first* in proportion to population.

In railroad development Minnesota has made equally rapid advancement.

The first ten miles of railroads within the State were completed July 2d, 1862, and though some years later a partial connection was made with eastern railroads by boat from Winona to La Crosse, it was not until 1868 that an all rail route was completed from Minnesota to the Eastern States.

The total number of miles constructed and in operation at the close of the year 1872, were a little over 1,900 miles.

In addition to which 100 miles of track were fully graded, and which the unusually setting in of the winter alone prevented from being in operation, which would give the State 2,000 miles of completed railroads, or one mile for each 260 inhabitants.

These statements will be sufficient to illustrate the rapid growth and development of Minnesota within the last 13 years.

A single State of that great Northwest which is now attracting the attention of the whole world, and which is destined at no distant day, to wield an immense influence on the destinies of the nation—but a portion of that “great wheat garden of the continent,” which when cultivated but to the extent of five per cent. of its tillable soil, will yield in round numbers 6,000,000 bushels of wheat.

Thus I have endeavored to picture the North Star State as possessing within herself all the elements of future greatness, and as having already made long strides toward the final consummation; and I trust you will agree with me that it requires but a united effort and a reasonable use of the means within her grasp to rival the first State in the Union, and that it is the duty of every citizen in his appointed sphere, no matter how humble, to urge with might and main the rapid progress of the mighty future.

At the present day we look back on the years that have passed, with contempt at the slow progress of those days, and smile in satisfaction that our lot has been placed among the rushing actualities of the present.

But greater things are yet in store for those who come after us.

Twenty-five or fifty years hence will witness such development as would at present, even with our exaggerated ideas of progress, be considered absurd to express in words, or even to contemplate.

But it is sure to come, and although we may not see it, those who come after us, and carefully consider the initiative steps which have been taken in our day and generation, will bear witness to the foresight and energy of those who preceded them, and who so securely laid the foundations of their prosperity.

Having thus sketched, as briefly as the nature of the subject would permit, the progress of the State in the past, I proceed to the consideration of points more intimately connected with the objects, wishes and results of your Association.

Horticulture, as distinguished from agriculture, the cultivation of the field, is that branch of rural art which consists in the formation and culture of gardens.

It has excited the attention of all civilized nations from the earliest periods of history.

We read in the Scriptures that Adam was placed in the Garden of Eden “to dress it and to keep it,” and that after the flood, which swept rebellious man, save eight persons, from existence, that “man became an husbandman and planted a vineyard.”

It is recorded of Solomon, to whom God gave wisdom and understanding above all the children of the East country, and all the wisdom of Egypt, that

“he spake also of trees—from the Cedar tree that is in Lebanon, even unto the Hyssop, that springeth out of the wall.”

And when Nebuchadnezzar, about 600 years before Christ, in the haughtiness of his heart, lifted up his eyes, and said “Behold this is great Babylon which I have builded,” his gaze no doubt rested on the hanging gardens of that ancient city, the admiration of the then world, which he had built to remind his Queen Amytis of the beautiful hills of her native land.

And so on, down through the pages of history, we find the culture of fruits and flowers, progressing hand in hand with the arts and sciences, and keeping pace with the culture and refinement of every age.

I have referred to horticulture as an adjunct to agriculture, meaning that a certain amount of agricultural development is (particularly in a new community) absolutely essential before the cultivation of fruits and flowers, would be prosecuted to any extent.

As a State we are peculiarly situated. The main portion of our population, spreading over our area from year to year, is composed of emigrants from foreign countries, who come here with little knowledge of the richness of the soil or adaptability of the climate, and in utter ignorance of the regional peculiarities which govern the treatment of trees, in planting, pruning, etc., or in the selection of proper varieties.

Besides this, the people bringing to our shores but little capital, save strong arms and stout hearts, the necessity first arises of securing, with the greatest degree of certainty, that which will afford food and clothing for themselves and their little ones.

In this state of the case it is scarcely to be expected that they would expend time and money in beautifying their homes by the cultivation of flowers, or in the purchase of trees, and in planting and caring for them, with the certainty that under the most fortunate circumstances, years must elapse before they could possibly receive the slightest return.

Besides this, there is the uncertainty, common to all new States, in regard to the selection of proper varieties, suited to the climate and soil, and, as in the case of this State, there being no practical information, based on the experience of others, to be procured in such condensed form as to be available for the masses, the pursuit of horticulture is entirely neglected or deferred to a distant day.

It remains, then, for those whose early residence and education has been in the old fruit growing States, or who have made horticulture a business or study, to foster and develop this industry.

Within the last fifteen years great progress has been made in horticulture, much of which is due to the dissemination of information through the horticultural press.

Time was, when the wild fruits of the field supplied all the wants of each community, and were acceptable to the then uncultivated tastes, but not so now.

Better qualities of every kind of fruit are now required, and though horticultural development has been stimulated by the increased demand and large prices for choice fruit, the supply has not yet exceeded the demand.

Various plans have of late years been contrived by which fruit is preserved from one season to another, and it is quite common to find the delicious strawberry, peach and other fruits on our tables in December, with a flavor nearly as rich as when plucked from the vine or tree.

These various plans of preservation have developed an immense trade, which annually carries from our shores thousands of dollars worth of the choicest of our fruit. Every vessel which leaves our ports carries with it a large quantity of fruits for the table, and canned or preserved fruits often form a portion of the cargo, so that there is scarcely a port touched by our vessels where the fruits of the United States cannot be procured.

A new process of preserving fruits and vegetables by evaporation has lately been introduced in the East, which bids fair to be extensively used. By this process the fruit retains its natural flavor and color; is prepared cheaply, and brings a higher price than common dried fruit, and there being no moist acids to act on the tin or wood in which they may be packed, the fruits and vegetables so prepared, are free from any taste of tin or anything except the acids and flavors natural to them.

If all that is claimed for this process is true, it must lead to an increased demand, and eventually supercede many of the modes now in general use.

The growth of manufactures in the State will be another strong stimulus to the production of fruit, and instead of sending large sums of money to other States to secure a supply, Minnesota should be in a position to take advantage of and supply this demand, and hold this trade within her own borders.

Large manufacturing establishments require the labor of large bodies of men, who, from the necessity of their occupation, are prevented from giving the slightest attention to the cultivation of the soil, and whose necessities must be supplied by a class entirely devoted to the pursuit.

It was with a full knowledge of these facts, and an earnest desire to remove, if possible, every obstacle in the way of general and successful fruit culture, that an effort was made at the last session of the Legislature to secure an appropriation for the purpose of disseminating proper information on this subject.

It is to be greatly regreted that this appropriation was not secured, as the publication of the result of long years of experiments would undoubtedly have been the means of benefiting every portion of the State.

I am pleased to see, however, that the effort will be renewed at the present session of the Legislature, and I trust that the petition will meet a generous response from our Senators and Representatives.

Let me urge the consideration of this subject upon every member of our State Legislature here present. You, in a great measure, wield public opinion in your several districts. You are acquainted with the wants of the different localities from whence you come, and your constituents look to you for aid in every enterprise affecting the public good.

No single body of men within the State, exert a wider or greater influence for public good than the Legislature, and the Association would respectfully press the matter upon your attention in the full confidence that the petition will be granted.

The production of fruit should be considered a subject of special public interest, particularly in a new and rapidly growing State, not only as a source of food supply which admits of preparation in a variety of forms, and is valuable as a hygienic agent, but as a diversification of the agricultural interests of the country.

Many of the States possessing greater advantages of climate than our own, have taken steps to furnish the information necessary to the successful culture of fruits, and it is to be hoped that the State of Minnesota will not hesitate or delay in a matter of such vital importance.

The individuals composing the Association asking the appropriation, are moved by no impulse of private aggrandizement—have no personal interests to subserve; but having expended years of patient inquiry and experiment on a subject in which the entire State has a vital interest, they now desire that the result of those labors, disappointments, repeated failures, and final triumphs shall be spread broadcast over the land for the individual benefit of every citizen.

The progress of horticulture throughout the State has been of slow growth, and it has only been after such repeated discouragement as would have entirely vanquished persons less enthusiastic than the members of this association, that the final consummation has been achieved in the practical demonstration of the capabilities of Minnesota as a fruit producing State.

For many years it was urged as a strong argument against settlement in Minnesota that fruits, such as apples and pears, could not be successfully or profitably raised.

That strawberries, grapes, plums, and the small fruits generally, could be cultivated there was no question, as these grew wild throughout the State, but it required practical demonstration year after year to prove even to some of our citizens that apples and pears could be successfully grown.

Should any doubt exist on this point, it must be entirely dissipated by the display before us this evening. Here are 50 varieties of standard apples; 10 or 12 varieties of crabs, and half a dozen varieties of grapes—all the growth of last season, and mostly by parties here present, and from all parts of a district nearly 200 miles in extent from south to north, or from the southern border of the State to within 100 miles of the shore of Lake Superior.

If he that makes two blades of grass grow where but one grew before, is a public benefactor, how much more he who covers our hillsides with the rich clusters of grapes, our orchards with golden fruit, and who fills our homes with the fragrance of beautiful flowers.

This plan of bringing together, at stated intervals, the best specimens of the field or garden, and by comparison securing a generous rivalry among producers from all parts of the State, has doubtless been of more general benefit than any scheme yet devised.

These fruits placed here for the scrutiny of the public, are an evidence of the faith of those who, surmounting all difficulties, have arrived at the consummation of their hopes, and are offered as an incentive to increased production.

These results have not been achieved by men claiming abilities, pre-eminent among their fellows, but by persistent persevering effort in the face of almost daily discouragements, which would have discouraged thousands less sanguine or less enthusiastic: just as success in life is not so much due to great talents or rare genius, as to a strong undeviating purpose.

The man that never failed, never lived, and probably never will. All success is a series of efforts in which are mingled more or less failures. The mountain is apt to overshadow the hill, but the hill is a reality nevertheless.

If we fail now and then, we should not be discouraged, but bear in mind that it is only the part and experience of every successful man, and that the most successful men often have the most failures.

In this connection let me refer you to the effect of protracted nursing upon our commonly cultivated fruits and plants, for our gardens are full of wonderful vegetable transformations.

The large and juicy carrot is only the woody, spindling root of the wild carrot luxuriously fed.

Our cabbages, cauliflowers, and turnips, in all their varieties, spring from one or more species of Brassica, which in their natural state have poor, woody, bitter stems and leaves, and useless, spindle shaped roots.

Our cultivated potato, with all its varieties, springs from the tiny and bitter root of the wild potato, which has its native home on the sea shore of Chili.

Our apples, pears, plums, grapes, and other prized fruits, all spring from well-known wild, and little esteemed progenitors.

The plum originated from a variety of the sloe, a small shrub or shrubby tree, three or four feet high, and a native of Southern Russia, and the Caucasus.

The wild pear, found over nearly the entire continent of Europe, and from whence spring our beautiful and delicious fruit, is small, sour, and unfit to eat.

The apricot, as found in its wild state in Persia, is a small, round, pale, yellow fruit, sub-acid in flavor—in its improved state being fully three times as large and sweet.

And who would recognize in the hundred varieties of beautiful apples the worthless, acid crab?

Yet these are the simple results of long cultivation, and an aggregation of practical experience, extending in some cases over a long period of years.

And now, gentlemen, what this Association desires is, that the dearly purchased experience of their members may be made useful to thousands who are deterred from attempting the cultivation of fruit by difficulties, resulting mainly from a want of accurate knowledge, by giving them the requisite information in such plain and practical manner as to be readily understood.

The advantage the new cultivators will have over the first growers is that they will have instructions to fall back upon; instructions which are safe to follow, because practical experiments, extending over a period of years, have taught what is to be done and what is to be avoided.

I trust, gentlemen, you will give this project the favorable consideration its

importance demands. There is no question that you feel an interest in the success of the fruit growers of the State, as a matter of State pride, and we come to you as to those whose high prerogative it is to legislate for the good of the entire community, and ask you in the name of every resident of the State, to aid in the enterprise—to give to the Society not only your approbation, but an appropriation also.

To the members of the Horticultural Society permit me to offer some suggestions which, at this season, may not be inappropriate.

We are now in the midst of the long Winter common to this latitude, in which we daily witness, in a peculiar manner, the power of the Almighty. As the Psalmist says, "He giveth snow like wool. He scattereth the hoar frost like ashes. He casteth forth his ice like morsels; who can stand before His cold?"

A season when the face of the country is hid as with a white mantle, when the Frost King decks our windows with fantastic forms, the air sparkles with congealed atoms, and the chime of swiftly moving bells borne upon the keen air fill our ears; when the trees, stripped of their green foliage, shiver in the winter blast, or decked in snow, glitter in the rays of the morning sun; when the noisy brooks have ceased their babbling, and the skater glides swiftly over the glassy surface of the frozen lakes and streams, that seem but awaiting opportunity to engulf him in their treacherous depths; when the woodman's axe resounds through the forests, and the tall pines that have survived the storm of centuries fall to the earth with a crash that reverberates among the hills and valleys; when nightly the moon shines with increased brightness from the blue vault of heaven, and the pole star glitters with redoubled light from its home in the north, while attendant planets circle round in all the brilliancy of courtly train; and when, while the icy breath of the north wind moans dismally around our dwellings, the fagot is piled high upon the hearth, and drawing close around its cheerful blaze with a feeling of thankfulness that we are not exposed to the rigor of the cold without, we recall tender remembrance of loved friends from whom distance has separated us, or silently and sadly muse on the once familiar "touch of a vanished hand, and the sound of a voice that is still."

But it is a season, also, with those engaged in the cultivation of the soil, for thinking, reading, and reflecting, and one which every prudent man should improve by making his past experience conduce to increased prosperity in the future.

At the commencement of each year, it is the custom of merchants, manufacturers, and business men generally, to go over the business of the past year, take an inventory of their stocks, and by drawing a balance sheet, ascertain the exact condition of their affairs. The various enterprises in which they have engaged are carefully examined, the causes which lead to failure or success are critically discussed, so that from the experience of the past, knowledge may be treasured up for future operations.

Why should not this be done by those engaged in horticulture as well? Such retrospection may save heavy losses and disappointments in the time to come.

Every horticulturist should improve his leisure time at this season of the year, in such reading and study as will qualify him more thoroughly for his profession.

I say *profession* because horticulture is the highest grade of soil cultivation, and is really as much of a profession as any other pursuit, and it is coming to be regarded more and more as a learned profession.

It is not mere manual labor. It requires brain-work as well as hand-work, and he will be most successful who has the most thorough knowledge of the scientific principles on which it is based.

The standard of education has been greatly elevated within the last few years, and while probably but few can acquire what is called a liberal education, every man, even in the round of his daily duties, and especially in the leisure hours of our long winters, can do much to acquire such knowledge as he can turn to practical account in his business, and which will make him a more influential and useful member of society.

A careful and attentive study of the various works on horticulture during the season when little or no out door work can be done, compared with your own experience, will form an excellent basis for laying plans for the coming year, and give reason to hope that the results of each succeeding year may exceed the previous one.

Every man should look out upon the community in which he is living and ask himself what he can do for its improvement.

Public spirit is a quality which every one is bound to cultivate.

There are enterprises in which all have a common interest, and although they may not bring a direct pecuniary gain to all those who advocate them, if they promote the public good, each one should take an interest in their advancement.

To those who have chosen horticulture as the business of their lives, I wish to say "honor your calling." Nothing is more common than to hear men finding fault with their occupation, and calling themselves unfortunate because stern necessity compels them to continue in a pursuit long after it has become distasteful.

A man should put his heart, and soul and strength into everything he does. Every business or profession has its peculiar cares, vexations and disappointments.

These are the common lot of humanity, and he that thinks to escape them by changing from one business or occupation to another, will only meet with disappointment.

As a writer, whom I have forgotten, says "How foolish, then, to lament over, or attempt to avert the inevitable. Brooding over our disappointments only gives them strength, and sours and embitters existence. On the other hand, a man has the power to shed beauty and pleasure on the homeliest calling. He should adopt his business in accordance with his tastes, and then surround it with pleasant associations; should look at the good that is around him, and forget the evil. He should accept his lot in life as a farmer does a rugged piece of ground, and begin at once to dig out the roots, remove

the rocks, to deepen and mellow the soil, to enrich and plant it, and blessed by the sunshine and rain of heaven, there will arise in his heart such joy as is beyond purchase."

To those who are now engaged, or contemplate engaging in the pursuit of horticulture, there is another important matter to which I wish to call attention, and that is the great disproportion, in this State, between men's farms and their capital. The capital of the man, who in any manner cultivates the soil, is his skilled labor and his money. If his means are small, he should have no more land than he can thoroughly manage by his own personal labor; every acre beyond this is an encumbrance.

One acre, well cultivated, is of more profit than twenty skimmed over. It is this hunger for more land that keeps men poor, and that prevents the State receiving the credit due her rich soil from continual large aggregate yields, which would be the result of systematic and thorough cultivation.

Small farms are better far than large ones, simply because they are better suited to the average capital of common farmers.

But large farms with large capital are better than small ones; but 640 acres of land in the possession of a man who has capital sufficient only to properly develop 40 acres, leads only to disaster. Either he pays taxes, and probably interest also, on 600 acres of superfluous land, or he spreads his small capital over the whole section, which, so far as results are concerned, is as valuable as a spoonfull of guano scattered over Vermillion Prairie.

Now, in no branch of soil culture is thorough and systematic cultivation so important and so certain of large returns, as in horticulture. No labor expended on the soil to increase its productiveness, is ever thrown away, and those who desire to increase their incomes, will find more lasting benefit from increased expenditure over the land already possessed and an increased degree of diligence in its cultivation, than from widening the boundaries of their possessions. There certainly is a point beyond which little return could be expected, but from all the information I have been enabled to gain, by reading and observation, the exact location of such a desired spot, in this State, has as yet not been determined.

There is scarcely an acre of land in the State which cannot be made profitable by the cultivation of some fruit crop. In thousands of acres classed as "swamp," and considered as more than valueless, the cranberry grows wild, which, when cultivated will produce a larger return per acre than the finest wheat land in the State. But the profit arising from the cultivation of this fruit, as in the case of all branches of fruit culture, cannot be realized, except as the reward of diligence based on practical knowledge; for no man, after having planted trees or small fruits, can sit down in idleness and wait for a bountiful harvest.

As a further incentive to increased production of fruit, permit me to call your attention to a comparison of apples displayed at the fair of the American Institute, in New York, in October and November, 1872. The State of Kansas was represented by three of the best informed horticulturists in their State; and the display of apples, in point of beauty and variety, would have

been creditable to the best fruit-producing State of the Union. Different fruit growers, also, throughout the Eastern States, placed on exhibition large quantities of the choicest products of their nurseries, so that the display from Minnesota, in point of numbers and variety, shrank into seeming insignificance. But the renewal of most of these fruits at short intervals, gave rise to conjectures, and as the State of Minnesota was interested in a comparison with all the other States, but more particularly with the State of Kansas, the only State near her own borders, which had entered into competition, the question of the relative value of the fruits of these two States was a subject of great importance. A critical examination of the Kansas apple revealed the fact, that while many varieties were large in size, they were deficient in flavor. Further, that the cells which contained the seeds were very large, forming a considerable cavity in the centre of the fruit; that they were lacking in solidity, and very soon shrank and withered. A comparison of the two States, by weight, showed that in all cases, taking an apple from each State, of the same size, the specific gravity of the Minnesota apple greatly exceeded that of the Kansas apple, and the superior keeping quality of the former was demonstrated by the fact that the Minnesota fruit remained firm and sound long after the Kansas fruit had decayed.

Now, when it is remembered that the greater part of these apples had previously been exhibited at the State Fair, in St. Paul, from September 17th to the 21st, had been forwarded by rail to New York, and placed in the heat, light, and other unfavorable surroundings of the Institute, until November 20th, it will readily be perceived that their keeping qualities were put to the severest test. Yet notwithstanding these adverse circumstances, at the close of the Institute Fair, after an interval of over two months from the time they had first been exhibited, more than one-half of Minnesota fruit was found free from decay, and some remained sound up to the close of the year. This is a triumph in which every citizen should feel a generous pride, and for which the State is indebted mainly to the members of this Association, through whose influence the fruit was secured. In view of these results, let me urge the State Horticultural Society, at its present anniversary, to appoint a committee specially to secure fruits from every portion of the State, to be exhibited at the next fair of the American Institute. It is but due the State that a fair display of her capacity, in this direction, should be made, as a further attraction to those seeking homes in the Northwest, and as settling, beyond all question, her status as a fruit-producing State.

The apple crop of the State, of the last year, was at least 30,000 bushels, a practical test of the culture of this fruit, but our ambition should not permit us to rest here. The value of the orchard products of the neighboring State of Wisconsin, according to the census returns of 1870, amounted to \$819,000, and, I see no reason, either climatic or otherwise, that would prevent an equal yield in the State of Minnesota. To increase the present production, and spread it over the length and breadth of the State, until Minnesota shall be the peer of any State in the Northwest, is among the prominent features of this Association—a load truly worthy of Atlas of mythological memory; but this end can and will be effected.

Not, however, be it understood, without exertion. Indeed, it will only be by unwearied effort, from year to year, allowing no difficulties to relax your efforts, that this great object can be realized.

And if this success is ardently desired—if your hearts are unwaveringly set upon the accomplishment of this purpose, you will succeed.

But no trifles must deter you, no toil or care must be considered as too great. The thousand and one discouragements and failures which will meet you at every step, must only incite to greater effort.

You must take hold of the accomplishment of this object with the same strength of purpose as he, who with eyes upturned to the summit of some lofty peak, presses up the mountain side step by step, not minding weariness, and even when foot sore and exhausted he sinks down, it is but to rise again to the same enterprise, unshaken in courage and undaunted in faith.

The address delivered, Mr. Truman Smith moved that the thanks of the Society be extended to Mr. Harris for his able and eloquent address. He wished to say further that the coming gathering of the great Pomological Convention of the United States was to meet, and he hoped that a committee would be appointed to go to the convention. Mr. Smith said he knew of one person who proposed to go at his own expense; and for one he would engage 100 pounds of grapes to whoever would take them.

Mr. J. S. Harris said he was one, especially, who felt the force of Col. Harris' remarks, as he himself was one who had pressed forward under all possible discouragements. He was sure that the future of Minnesota would in time stand equal to that of any State in the Union.

Mr. Smith declared his belief that on a former occasion Kansas, through somebody's neglect, had been credited with the merits of Minnesota.

On motion, the President put to vote the resolution of extending thanks to Col. Harris, and it was carried.

On motion of Judge Baker, the President of the State Agricultural Society, Mr. O. P. Whitcomb, who was on the platform, was invited to address the Society, and that gentleman promptly responded. He said he took pleasure in acknowledging the satisfaction the address had given him. Also to acknowledge his obligations to the Horticultural Society for its aid in making attractive the State Fairs, for without their aid, their exhibition would have been like the play of Hamlet with Hamlet left out. He had, besides, felt under obligations to the speaker for his aid in furnishing articles for exhibition hitherto.

On motion, a brief recess was taken to enable those present to examine the fruit, and other articles on exhibition.

The President called the meeting to order after a recess of 15 minutes, and on reassembling, Col. Stevens called the attention of the Society to the fact that the Governor was in the hall, and as he had honored the Society with his presence, he moved that the Society hear from him.

The Governor, in response, said that usually he liked to talk of things about which he knew something, but he, himself, knew little about fruit growing, and gave a ludicrous account of his experience in trying to raise fruit, failing

at all points both in grafts and seedlings. His undertakings had been on a limited scale, to be sure; but they had amounted to little, and he would notify all his friends that if they wanted any scions of his seedlings at one dollar and a half apiece, he was ready to supply them. He was satisfied, however, that the northern part of the country produced the most perfect fruit, and the prospect was therefore encouraging in that regard.

Mr. Hamilton said the presence of the Governor reminded him of something in his message, recommending the growth of forest trees in the State. The planting of trees was not only a benefit to the State at large but to the horticulturists in particular. The planting was profitable, as a farmer had proved by raising them at \$1,000 per acre.

Mr. Harris said it had always been, to some extent, the aim of the Society to encourage the planting of forest trees, and all else that would beautify and improve our homes. But fruit culture had so entirely occupied the attention of the Society, as to prevent due attention to forest culture. He had hoped it would be different in the future. It added greatly to the comfort of the inmates to have shade trees around a house. Minnesota had needed shade trees greatly, and would be compelled to have more of them in the future. Flowers, too, add much to the beauty of our homes. Mr. Harris gave an interesting personal experience of his beginning in fruit culture, which had been a great success; and he felt grateful to the State for his success in that line. He believed that that beginning had done much to introduce fruit culture in the State.

Mr. Cox was called upon to address the meeting. He said that horticulture, arboriculture, and agriculture were the three graces. He had never expected to see such a display of fruit in Minnesota as was seen to-night. He concluded thus: That when he first came to Minnesota he concluded that his vocation was not hard work; but he did plant out five cottonwood trees, which had greatly flourished. He had succeeded with others, evergreens, and so on. He had had as complete success with evergreens as with cottonwood, and the last named were invaluable to keep off the wind. He showed that trees generally enhanced the value of property. He had been quite successful in planting soft maples along with cottonwoods. He had tried cherries, and they had proved in some cases certainly a success.

Mr. Tuttle wished to say that it was quite as essential to give fruit trees room as corn. He thought it well to intersperse evergreens with fruit trees. He never knew a worm to cut out a tree, although an orchard would only bear fruit on the outer edges. The evergreens not only beautified the farm but benefited it. A \$100 worth of small evergreens would be almost invaluable as a protection.

Mr. Hamilton said that he bought, two years ago, 2,000 evergreens for their cemetery in Winona, and they lost but very few, although the trees were considered over size. They were laughed at; but the Austrian pine, Norway spruce, arbor vitæ, and the balsam fir, all did well. The arbor vitæ seemed to be the best. He was, besides, a friend to the birds, and those evergreens harbored the birds greatly, even to the quail, which he had seen lying dead on the prairie for want of protection.

Mr. Ford had talked fruit culture with the late Horace Greeley, and the latter remembered that fruit growers here had had a pretty hard time of it, especially in regard to apple culture. He had expressed his faith in fruit culture to Mr. Greeley many years ago; and upon one occasion had deprecated to Mr. Greeley a notice of our failures in the *Tribune* as perhaps liable to injure Minnesota as a fruit growing State. Mr. Ford said that *that* appeared to be the foundation of Mr. Greeley's remarks on the assumed authority of himself—Mr. Ford—"that Minnesota could grow nothing but crab apples."

Here a motion was made and carried, to adjourn to to-morrow morning at 10 o'clock.

THURSDAY MORNING SESSION.

Society met at 10 o'clock, according to adjournment, and was called to order by Vice President Dart.

The Chairman suggested that several subjects were laid upon the table yesterday, that ought to be taken up to-day.

Judge Baker moved that the report of the Corresponding Secretary be considered.

Carried.

Judge Baker moved further that all County Horticultural Societies be recognized as auxiliary to this, unless an annual report be made to this of the officers; the motion to be conferred by a by-law.

Judge Baker moved further, that the in-coming President appoint delegates to represent this Society in the neighboring States of Iowa and Wisconsin at the meeting of their societies.

Mr. Dart—Mr. J. S. Harris in the chair—insisted that the matter be left in such shape that any one could go without a formal appointment: He wanted to see the thing carried out without formality. He wanted a thorough comingling of these societies without form. He did not know whether the gentlemen present from Wisconsin were formally made delegates or not. If they were, we might need some regular meeting of appointment in sending delegates.

Mr. Ford thought that, unless the thing was regularly done, there might be difficulty in getting passes for such trips.

Judge Baker suggested that it should be delegate or delegates; not limiting numbers, Mr. Ford accepted that method of adjusting the matter.

Mr. Harris thought that if we would send delegates we would get delegates in return, and probably valuable essays. He wanted a feeling of brotherhood in regard to this matter.

Col. Stevens suggested that Wisconsin and Iowa were the parents of Minnesota, and on the score of gratitude to parents, we ought to recognize and correspond with them. All that we had of horticulture we owed to these States.

The motion to appoint delegates to Iowa, Wisconsin and Northern Illinois was then carried.

It was moved that a committee be appointed, with Mr. Truman M. Smith as Chairman, Messrs. Hamilton and Elliot as members, to report on evergreens.

Mr. Smith moved that Mr. Grimes be added to the committee, which was carried.

Col. Stevens moved that Mr. Ford be added, as he had made a specialty of evergreens twenty years ago.

Mr. Ford declined, on the score of pressing engagements.

Mr. Harris next took up the case of the *Farmers' Union*. He said that it was the organ of the farmers of the State, and ably conducted as it was, he moved that the *Farmers' Union* be adopted as the organ of the Society. It was moved, secondly, that this matter be referred to a committee of three, which was carried, and Messrs. Brimhall, Ford and Elliot were appointed such committee.

Mr. Elliot said that in view of the difficulties had hitherto with premium lists, he moved that a committee be appointed to report whether the list of premiums should be revised.

Agreed to, and Messrs. Smith, Grimes and Goodyear were appointed such committee.

Mr. Smith moved that the Secretary of the Horticultural Societies of the different counties be requested to furnish information in regard to the timber, soil, etc., of each county.

Mr. Harris suggested that standing committees be appointed on ornithology, entomology, and various other subjects, which was carried.

Mr. Harris suggested an amendment that another strenuous effort should be made to get the aid and countenance of the Legislature.

Mr. Smith moved that Messrs. Judge Baker, Col. Stevens and Elliot be made a committee to push things through.

Carried.

Mr. Harris suggested that the in-coming President appoint as many delegates as would go, without expense to the Society, to the Pomological Society, to meet in Boston.

The motion was carried.

Mr. Elliot, by leave, said that when a delegate was appointed two years ago, it was hoped that his expenses would have been paid. As the Society did not do so, several persons of Minneapolis thought it of importance enough to raise money and send him. This year he doubted whether one could be found readily to go, and that the matter ought not to be left to chance; that the Legislature ought to be urged to help.

Judge Baker, from the Committee on Mr. Loring's proposition, made a report that the same was highly appreciated, but asking time for further consideration of the subject. The report was accordingly referred back to the committee, as requested.

Judge Baker, from the committee appointed, last year, to visit the Univer-

sity, reported that they had performed that duty, and that whilst a good collegiate institution was found, the committee found, also, that little or no attention was paid to agricultural matters.

Moved that the report be received and adopted, which was agreed to.

Judge Baker moved that a committee of five be appointed to nominate officers to be voted for the ensuing year.

Carried.

The Chairman announced as such committee Messrs. Baker, Brimhall, Brand, Grimes and Stewart.

The Secretary read a report from S. Bates & Son, Stockton, Minnesota.

REPORT FROM S. BATES & SON.

STOCKTON, Minn., Jan. 10, 1870.

Gentlemen of Minnesota State Horticultural Society:

Not being able to meet with you we send a small report of our success in trying to raise fruits. We answer by numbers, as per Recording Secretary's request.

No. 1. Too numerous to write.

No. 2. Flemish Beauty.

No. 3. Concord, Delaware, Clinton, Oporto, Northern Muscadine, Goethe, Agawam.

No. 4. Jerkin, Concord, Air Favorite; but think Eumelan good for trial.

No. 5. Miner, Lombard, (Koenig, a seedling, blue in color, good,) Early Richard, Red Dutch, White Dutch, Black Maples, Houghton's Seedling, Welcome strawberry, very early and choice flavor; Wilson's Albany, Green's Prolific, Agriculturalist and Austin; Welcome, Green's Prolific, and Wilson are our favorites.

No. 6. Varieties of apples, varied. *Fameuse, *Perry and Golden Russet, *Paradise, Winter Sweeting, Pomme Grise Russet, *Jefferson County Dominie, *Price's Sweet, *Duchess, *Red, *Yellow, *Cherry, *Hyslop, Transcendent, *Darfmouth, *Montreal Beauty, a *Soulard Crab, *Tetofsky, *Lucy or Utter's Red, *Early or Red June, *Sweet June, *Jonathan, *Rawle's Janet, Ramsdell Sweet, Tallman Sweet, *Seek-no-further, *Benoni, Spice Apple, *Little Red Romanite, Keswick Codlin, Baldwin.

I have some other kinds of little value. Those marked with a * are doing well, besides others, Ben Davis, etc. We generally find anything that does well in nursery row hardy in orchards.

No. 7. We raised but a light crop last year of fruit of all kinds. The Codlin moth is in our orchard, which marred the late apples badly; had about 50 bushels of apples last year. The Tetofsky we admire very much. We had about two or three pecks of this variety, but the terrific storm of rain and wind blew them off the tree, so we did not realize any very good fruits. We consider the Jonathan a very nice apple, when it will grow, and should like to see it tried; we consider it an apple of rare merit.

No. 8. No.

No. 9. No. Do not believe in it, only the first year of setting, to keep the ground damp until the tree gets started.

No. 10. In June, if ever do; do not believe in pruning as much as some; body of tree two to four feet high and low enough.

No. 11. Prepare like wheat or corn ground; no fertilizers needed.

No. 12. August to September. Orchard hoed crop; others more.

Very respectfully,

S. BATES & SON.

The moth was indicated as a great drawback by Messrs. S. Bates & Son, eliciting some experience from other gentlemen.

REPORT OF THE COMMITTEE ON HARDY FRUITS.

The committee on Apple Trees reported:

For hardy varieties—Early Autumn—Tetofsky, Duchess. Fall and early Winter—Fameuse, Haas, Plumb's Cider. Late Winter—Ben Davis.

For trial—Red Astrachan, St. Lawrence, Autumn Strawberry, Fall Stripe. Early Winter—Price's Sweet, Tallman Sweet, Golden Russet, Little Romanite.

It was decided to let the people choose on the different varieties of crabs for themselves.

Pears—report one variety—Flemish Beauty.

Moved to place Fameuse in the second list.

The subject of apple and pear tree blight was then taken up for discussion informally.

Col. Stevens said that there was a vast difference of opinion on this subject; some thought it an insect or fungus. His trees had thus far escaped, and although all efforts had been made at an investigation, it was still a mystery as much as ever. He did not think the horticulturists of the State had much to fear from it.

Gen. Nutting desired to say that when it was in order he wished to call up the matter of having a good delegation to the Pomological Association.

Mr. Smith declared—recurring to the blight question—that he had suffered a good deal of late from that cause, and he thought it was caused by electricity somehow; that the blight always came on with extreme heat following a thunder shower.

Mr. Harris said he had spent for weeks, an hour per day, trying to find out about blight, but he was no wiser now than formerly; still he hoped that inquiry would go on. He had lost by it, every bearing pear tree but one. It did the apple tree no particular damage, although it killed the pear tree. He hoped if any one knew anything about blight, they would tell it. His soil was a sandy clay loam with clay subsoil.

Mr. Gould thought that a tree, when in a weakened state from any cause, was most subject to blight. Apple trees are mostly afflicted after becoming two years of age. Transcendent crabs and Hyslops seemed most readily affected by blight.

Mr. Ford did not believe in the insect theory. He believed in locality and soil. He had never lost more than two or three trees by blight.

Mr. Dart—Mr. Ford in the chair—said he had suffered a good deal by this trouble. He agreed with Mr. Smith that it must be attributed to an overcharge of electricity. He thought there might be enough to kill young and tender twigs, whilst it would not kill the tree. He had one or two thousand trees affected more or less. He did not know whether to discard them all, throw them away or not. It was an important fact that some trees were worse affected than others. The Transcendent and Golden Russet had suffered worst; the Tetofsky somewhat. He thought it an error of some speaker here, that the blight was little to be feared.

Col. Stevens said that Mr. Harrison, who formerly lived at Bellevue, Ill., had been troubled with blight twenty years ago; that, therefore, it was no new thing, but that after some three years it quite disappeared.

Prof. Folwell having made his appearance in the hall, was, on motion of Judge Baker, invited to a seat on the platform by the side of the Chairman.

Mr. Smith went into a history of some electrical phenomena bearing upon blight, as he supposed.

Capt. Paist thought that Col. Stevens was in a good position to investigate this matter of blight, and he hoped that members would take the *Farmers' Union*, for that, amongst other reasons, and he would constitute himself an agent for the paper—with the Colonel's permission—to extend the circulation of the paper and pursue this investigation.

Mr. A. W. Latham recognized the great mischief accomplished by blight, and gave instances to illustrate it. He said that Mr. Gideon's experience was that trees were worst visited on matured land.

Mr. Gould had known trees standing in fields covered with grass and weeds which had escaped blight. He thought the chances were better, perhaps, on light and dry ground than on low grounds.

Mr. Brand said he had as rich ground as any in the State, and the past year he had not been troubled with blight at all. His experience was that the crabs suffered worst; the Vestal Rose worst of all.

Mr. Elliot moved that the topic under discussion be suspended, as President Folwell, now in the hall, desired to make some communication to the Society.

Agreed to.

President Folwell said all were aware that the State Agricultural College was too poor to have done anything hitherto, owing to the limited sale of lands, but their circumstances were improving. If they had some small means, they would be glad to start a small greenhouse and garden, and he hoped the Society would entertain this view of the case. He would read the resolutions following, hoping that somebody else would take up this matter and push it through:

WHEREAS, The instruction of our youth in science and practice of fruit, flower and garden culture is a matter of great public interest and importance; and

WHEREAS, The Governor of the State has twice recommended, in annual messages, that the Agricultural College, now a department of the State University, be charged with the propagation and distribution of forest tree seeds and plants, and in general with encouraging and stimulating the culture of forests; and

WHEREAS, The Board of Regents of the University have hitherto been unable, by reason of the failure to dispose of the lands forming the endowment of the institution, to undertake the important work indicated: therefore,

Resolved, That this Convention respectfully ask the Legislature, now in session, to make a liberal appropriation for the erection of a greenhouse and the preparation of a botanic garden, and also an additional annual appropriation for the support and maintenance of the same, until such time as the University funds shall be sufficient for the purpose.

Resolved, further, That the President and other officers of this Society be a committee, who shall bring this measure to the attention of the Governor and the Legislature.

Resolved, further, That this convention hereby pledge themselves to the hearty support of the enterprise contemplated in the foregoing articles, and that they have pleasure in conveying to the Legislature the assurance that the horticulturalists of the State stand ready to stock the garden and greenhouse of the Agricultural College, whenever the same may be ready to go into operation free of expense.

Resolved, That we fully concur with the resolution of President Folwell as to the necessity of the State giving at once aid to the Agricultural College. Further, we deem the course of former Legislatures towards the laboring interests of our State as fatal, and we would respectfully urge upon the present Legislature a liberal appropriation for the opening of a botanical garden and grounds upon the farm, to train the youth in the art and love of labor.

President Folwell said he would not discuss the matter further, but he expressed his thanks for the hearing.

Gen. Nutting moved that the resolutions be referred to a committee of three, which was carried. Mr. Baker, Mr. Paist, and Mr. Gould were then appointed such committee.

Col. Stevens moved that the report referring to this matter be read for the information of President Folwell.

Judge Baker said that the feeling expressed by President Folwell was shared by the Society, and that whilst they blamed no one for the deficiencies observed, they wished to see matters improved.

Judge Baker then read the report as follows :

REPORT OF COMMITTEE ON STATE UNIVERSITY.

We, the undersigned having been appointed a committee to visit the State University, two years since, would most respectfully beg leave to report that they attended to that duty soon after their said appointment, and they found, to all appearances, a good, well regulated, and prosperous college in all its branches; without any class in Botany, and without the least sign of anything being done in regard to agriculture or horticulture; not even a single green plant for the Professor of Agriculture to lecture from, or demonstrate how plants grow, but, on the contrary, explaining the same from drawings on the black-board.

Congress very wisely appropriated land in the interest of education, and while other States have organizations under these grants, in good working order, attended with the most beneficial results, ours, by some unaccountable delay, has not established a system of education suitable to the wants of the State.

Now, we the undersigned, feeling the importance of both agriculture and horticulture to our State, would suggest the forming of classes, the establishment of specimen grounds, and the opening of our farm to the labor of our sons, under competent and practical teachers.

D. A. J. BAKER,
TRUMAN M. SMITH.

Judge Baker, from the committee to nominate officers for the Society, remarked, that, after entire harmony, they had to name the following :

President—Truman M. Smith.

Vice Presidents—J. M. Dart, Gen. L. Nutting, Thomas Ramsdell.

Secretary—John S. Harris.

Treasurer—Wyman Elliot.

Ex. Committee—Wyman Elliot, J. F. True, C. D. McKellip.

A report from the committee on the *Farmer's Union* was read by Mr. Elliot, as follows, which was adopted :

Your committee, having the reading of most of the agricultural and horticultural papers of our country, and believing the *Farmers' Union* one of the ablest and best adapted papers to Minnesota and the West, would respectfully beg leave to make the following report:

That we adopt the *Farmers' Union* as the official organ of the Minnesota Horticultural Society, and that we aid the same by subscribing, and soliciting subscriptions from our friends and neighbors, and by furnishing articles and facts upon horticulture, and similar subjects for publication.

W. E. BRIMHALL,
L. M. FORD,
WYMAN ELLIOT.

Col. Stephens expressed his thanks for the support of the Society, and said that whilst he had a large amount of money invested in the enterprise, and could get on without pecuniary help, he did need communications, and hoped

the Society would furnish them. He was the sole proprietor; the paper was comparatively out of debt, and he hoped to be able to keep it up.

Gen. Nutting again took up the subject of a delegation to the Pomological Convention at Boston, and he hoped that the President and Secretary would take up the matter and be authorized to do so, and see that the Society be represented in that meeting by at least three delegates; and to secure the needful funds for that purpose.

Carried.

The Chairman (Mr. Dart) begged pardon for not having at once invited the President elect of the Society to the Chair.

Mr. Smith was thereupon inducted into office, Judge Baker hoping to hear a speech from him.

The new President expressed his doubts whether the meeting would care to hear a speech from anybody when the dinner bell was ringing. He thanked the Society for the honor conferred—for it was an honor—and gave, briefly, his experience and trials in starting out, in grape culture particularly. He would endeavor to do his duty as Chairman, and again thanked the Society, and hoped to have its support in the duties devolving upon him.

Judge Baker moved that the Chair appoint delegates to the Boston Pomological Convention.

Agreed to.

Judge Baker moved that President Folwell be elected an honorary member of the Society, which was also agreed to.

President Folwell briefly expressed his thanks for the honor so conferred, after which a motion was made and carried to adjourn to 2 P. M.

THURSDAY AFTERNOON SESSION.

The President called the Society to order.

On motion of Judge Baker, the thanks of the Society were tendered to R. J. Mendenhall for the able and courteous manner in which he had presided over the deliberations of the Society. He said they never expected to better themselves, but as Mr. M.'s business had caused the necessity of his retiring, he was glad he was still going to be one of them.

The following resolution was unanimously passed:

Resolved, That our thanks are due to our retiring Secretary, A. W. McKinstry, for his energy and untiring efforts to promote the best interest of our Society.

Mr. Grimes, from the committee on evergreens, offered a list of evergreens for general culture.

A motion was made for the adoption of the report, pending which a discussion on the merits of the list ensued, participated in by Messrs. Grimes, Baker, and others.

Mr. Grimes said that in making up the list the committee had been careful

to select such as were best calculated to shelter farms, and could most easily be procured. He said the Scotch Pine was a beautiful tree and easily grown.

Judge Baker would take out the Red Cedar, and would rather have the Austrian Pine.

Gen. Nutting would put the Red Cedar at the head of the list, as it stood more abuse than any other evergreen, and was easily transplanted. Besides, as Mr. Grimes remarked, it could be trimmed into any shape.

Mr. Harris said he had succeeded with the Austrian Pine, and could recommend that.

Mr. Ford wanted to see more natives planted, rather than some of those named. The Austrian Pine had been killed as he knew. Minneapolis planted ten cedars to one of Scotch or Austrian Pine, the latter having, in many cases not succeeded well. He had never seen anything excel a Balsam Fir, such as now grew in Mrs. Goheen's yard, on sandy soil, in Minneapolis. As a rule, people selected Balsam Fir in preference to most others. The Red Cedar was indeed a good tree, and, as had been remarked, could be trimmed into any shape.

Col. Stevens moved that the report be laid over until to-morrow.

The Chairman announced that the next business in order was an address by Mr. Harris, on "The planting and cultivation of market orchards, the benefits to be derived from mulching, and the best material for that purpose." Mr. Harris thereupon read his essay, as follows:

REPORT ON FRUIT GROWING FOR MARKET.

Although I have had an experience of 15 years in this State, I have many misgivings about presenting this paper to the Horticultural Society, and yet I have made a success of the business.

There is no doubt but that fruit growing for market will prove to be profitable, even in this State, when the right location is selected, the right kind of trees are planted, and the right kind of men go into the business; but there are locations so unfavorable, trees so worthless, and men so careless, that there will always be cases of loss. One of the most essential things towards success is the man who takes hold of the business. He should understand the nature of soils, the habits of trees, and the best method of cultivation for his native locality; he should love the business, and have faith in it; be careful, diligent, and observing, and especially so in this State, where we have so many unfavorable circumstances to contend with and so little horticultural knowledge that is derived from experience.

LOCATION.

The best location would be in the vicinity of some city or thriving village, or near a railroad or navigable river, and no advantage of soil or aspect could fully make up for an unfavorable location. The next essential point toward success is the selection of the soil and its preparation previous to planting. The universal experience of apple orcharding is, that sandy loam is the best of all soils; that elevated or high land is better than valleys, and that there must be good drainage, either natural or artificial, and that the aspect is of minor importance. It is very unwise to plant trees without a previous thorough preparation of the soil. Several plowings are essential, and if the land is nearly level, the plowing should be done with the view to leaving the ground in ridges corresponding, in width, to the distance apart the trees are to be planted.

From the experience and observation I have had, I would recommend planting apple trees 16 feet apart each way, with a view of removing alternate trees as they become crowded, except upon open prairies; there I would plant about 12 feet apart, and about every tenth row to evergreens. By planting thus close no crops can be taken from the ground after two or three years, which is a great saving of the fertility of the soil, and obviates the necessity of mulching, of which I shall speak at another time. Experience has proved that Spring is the

safest time for transplanting trees in the Northwest. The reason is very plain. A tree or plant is a thing of life as much as an animal, and in order to endure the rigors of a Minnesota Winter, must have, through its roots, a vital hold upon the soil, which it cannot have if planted in the Fall, with mutilated roots and the rootlets left where the tree was taken from. There is, doubtless, a circulation of sap, at least in the mild days of Winter, and there is a constant evaporation going on from every bud, twig and branch, and the roots having no hold upon the earth and no mouths to drink in supplies, this evaporation must greatly enfeeble the tree, if it does not kill it outright. But while I advocate spring planting, I hold to the theory that the trees should be secured, dug, transported root and top, pruned, if necessary, and heeled in with the roots out of the reach of frost in the Fall. I last Spring planted 15 trees that were thus treated, and six of the same variety that were equally good, but were dug up, pruned and planted in the Spring. The former made a growth of from one to two feet, the latter two to six inches; the former looked clean and healthy, the latter consumptive, and if they endure the present severe Winter, will very likely be black-hearted.

PLANTING.

If the ground is well prepared it is not essential to open holes larger than to receive the roots without cramping. After the hole is dug and the tree placed just where it is wanted, it should be held in place with one hand while with the other, fine soil is worked among the roots, and care must be taken that there is no place left where roots and soil do not come in contact. To expedite the business of planting, I first lay off my ground and set a small stake at every point where a tree is to stand; next, provide myself with a machine, which was described many years ago in some agricultural paper, viz., a board five feet long, six inches broad, an inch hole in each end and a notch in the center, and two stakes that will slip easily through the holes. It is used by laying the board down with the notch fitting to the stake, inserting the end stakes, removing the board and outer stake, digging the hole, laying the board back over the end stakes, and setting the tree to have the trunk fit into the notch where the first stake stood. After the hole is filled, give a firm pressure with the feet and finish off by drawing some fine loose soil about the tree, leaving the surface loose for two or three feet from the trunk.

MULCHING.

As a general rule, if a tree is properly taken up at the nursery, rightly handled afterward and planted with care in suitable, prepared soil, it will live. But it is safer to give a mulching immediately after planting. The great object in mulching is to retain moisture in the ground and give an even temperature to the soil. Almost any waste material will answer for this purpose, but old leaves half decayed, hay or straw, or moss from a swamp, is the best. Chip manure and ground muck should not be used, neither fermenting manures. My practice is to let the mulching remain undisturbed until about the first of September, and then remove it, that the soil about the roots may cool off as the nights get frosty, and replace it after Winter sets in.

The next item of importance is cultivation. In our virgin soil I think it beneficial to raise crops of corn, beans, potatoes, and other early maturing vegetables between the rows, (giving them no cultivation after the first of July,) until the trees come to bearing, after which time they should be allowed to occupy the whole ground, receiving a shallow plowing and harrowing in May and June each year. The best and most fruitful orchard I ever had anything to do with was plowed, cultivated and planted with a rotation of crops, until many of the trees were nearly one foot in diameter, and more than double the size of trees of the same age in the orchard upon an adjoining farm that had been sodded down and used as a meadow, while the crop of fruit was from three to four times as great and much superior in quality. The fertility of the soil was kept up by the application of lime, ashes, and the manner of culture.

PRUNING.

With some varieties pruning seems to be a necessity. In Ohio I have spent weeks, in the month of February, in thinning out and shaping up old apple trees, without any apparent injury to them, but a like process in this State would be certain death. Why, I am unable to tell. Here the work should be done as sparingly as circumstances will permit, and in my opinion the best times are July and October, or November, and wounds of one-quarter of an inch or more in diameter, should be covered with grafting cement or paint, to prevent decay from the action of the weather, and the trees should be headed, say, from two to four feet.

GRAFTING AND BUDDING.

On account of mistakes of our judgment of varieties, blunders of nurserymen, the swind-

ling of peddlers, and the new hybrid Siberian mania that sometimes is brought on by sunny, beautiful pictures and hearing eloquent praises, it is highly important to be proficient in the art of budding and grafting, that the worthless and unprofitable may be converted into the good and valuable; but this art is so easily mastered that it is scarcely necessary to lengthen this paper by entering into the details.

VARIETIES.

It is impossible to name a list adapted to every locality, and that would hold good in all time. At the present time, where the market is convenient, more money can be realized from the Red Astrachan, St. Lawrence and Fameuse, than any other varieties. But as the people of villages and cities are planting largely of Tetofsky, Duchess of Oldenburg and the Siberians, which are especially adapted for gardens and bearing early and profusely, and are in season with the two first named, I very much doubt the wisdom of planting largely of autumn varieties for future profit, and would rather recommend later keeping varieties. A few choice varieties are better than many, and a single variety made a specialty, if we had the experience to know what one to take, would be the best. I will name a few varieties to be used until the coming apple makes its appearance, viz.: Haas, Little Romanite, Ben Davis, for all places; and for favorable localities, Fameuse, Jonathan, Seek-no-further, and Northern Spy.

Upon picking, marketing and keeping, I will not dwell at this time, as they are subjects that will be discussed before this Society in their proper place. I have said my say as briefly as I am able, and said nothing that is not confirmed by experience and observation. My faith in Minnesota as the great apple region of the Northwest, remains unshaken.

Mr. Harris' essay was received with much favor, Judge Baker moving a vote of thanks for the same, which was carried.

Mr. Harris expressed his thanks for the compliment conveyed him by his election as Secretary.

Judge Baker called for the list of annuals, and it was read off, as follows, by Mr. Harris:

LIST OF FLOWERS FOR GENERAL CULTIVATION.

Annuals.—Astors, Balsams, Candy Tuft, Larkspur, Mignonette, Petunias, Portulacca, Phlox Drummondii, Sweet Pea, Zinnias, Nobles Catchfly, Cornucopias, Eschscholz, Six Weeks' Stock, Scabiosa, Marigolds.

Hardy Herbaceous Plants.—Achillens, Columbines, Delphinium, Hollyhock, Pionies, Perennial Phlox, Sweet William, Liliums, Sedum, or Stone Wall Flower, Dillytra, Lychnis, Heroaceous Sprocea, Dianthus Plumeris, Lily of the Valley, Pansy, Tulip, Roseum, Rubrum, Auratim, Lancifolium, Canadensium, Tiger Lily.

Hardy Shrubs.—Gleditsia, Thriassiantha, Three Thorned Acacia, Coatuegus or Buckthorn, Carrayana or Tear Tree, Weigelia Roses, Yellow Currant, Barberry, White Finger, Tree Cranberry, Burning Bush, Yellow Harrison, White, Pink and Yellow Scotch, Blush and Cinnamon, Lilac, Snowball, Spirea, Turburian Honeysuckle, Roses, Mock Orange.

Tender or Half Hardy Shrubs.—Flowering Almond, Wigelias, Tender Roses, Spirea Prunifolia, Dutzias, Tree Peonia, Japan Quince, Mahonia, Tamarix Africana.

Budding out Plants, (Bulbous).—Gonale and Rose Geraniums, Verbenas, Latnas, Dahlias, Gladiolas, Tygridas, Cannal, Caladium, Esculatium, Tube Rose, Tritama, Heliotropes, Lantana, Feverfew, Coleus, Astheranthus, Double Petunias, Pansies, Centaurea.

Gen. Nutting moved that the report be adopted, and the committee discharged, which was carried.

Mr. Harris next moved that the report be taken up, and the annuals be discussed by classes; which was agreed to, and an animated discussion ensued on the merits of the various plants. The list of annuals, as amended, was then adopted.

Next came the presentation of the list of horticultural plants; which, after being amended by sundry additions, was adopted.

The next list which was presented and discussed, was the list of shrubs—hardy in character, and after discussion, it was adopted.

Next came the semi-annual list, which was likewise amended and adopted.

Col. Stevens suggested that there should be some hardy roses added to the list, such as were known to be hardy, and would need no covering.

Mr. Ford named Yellow Harrison, White, Pink and Yellow Scotch—in all some eight kinds; Blush, Cinnamon and Sweet Briar.

Failed to be adopted.

Next came tender bulb plants.

Judge Baker, called up the resolutions presented by President Folwell, which were read by the Secretary.

Judge Baker, from the committee appointed to act upon said resolutions, presented his report.

Moved that the report be accepted, and the resolutions adopted.

Judge Baker, in remarking upon the resolutions, said that with the exception of the green house, the committee approved what was advanced, especially the formation of a Botanical Garden, and this ought to have a liberal appropriation from the Legislature for that purpose.

President Folwell, in explanation, said that he only desired a very modest affair, to be used in conjunction with the Botanical Garden. The time had gone by when you could talk altogether to teach natural science—there must be illustration and means for it. That was all.

He took occasion there to vindicate the Board of Regents from the charges imputed in the action of the Horticultural Society: they had made mistakes, growing out of inexperience; and he went into an explanation of the embarrassments undergone by the officers of the institution, vindicating them very fairly, as it would seem. President Folwell explained the difficulties he had encountered in getting a Professor of Agriculture. President F. said that it was very hard to teach science, although they might teach Latin, Greek and Mathematics well; but Botany and Agriculture were taught well in the fewest possible cases, illustrating it by instances at home and abroad. Too often those graduating at agricultural schools did not expect to practice upon what they had learned. He had proposed a special course in agricultural science, taking any young men they could get hold of in the Fall, and so teach them what they could learn. Students, in many cases, studied the sciences pertaining to agriculture, but without expecting to be practical agriculturists. Horticulture was far more a favorite study with young people than agriculture, and the farm was a good thing to start with.

In reply to a question about Iowa, President F. said that Iowa was making a capital start in conjunction with a manual labor course. The Legislature had been liberal with them, and, in our case, we were restricted on every side. He did not complain, but he hoped for better things in future. The College had a farm of 154 acres, but it was not handy to the College, and was too wet, all but 40 acres. It was well adapted to the purposes sought, however, only the farm needed improving. The town was a good one for the students in the ability, they had to get employment as they might need it.

But when the farm work was most needed the students were generally absent. So far, no student had applied for a thorough course in agriculture.

In answer to the inquiry as to the amount of money needed, President F. said they ought to have some money, at least \$500, for drainage, etc.

Captain Paist hoped the resolution would be adopted. Labor was becoming more and more honorable in the State, and he hoped the Legislature would be urged to make an appropriation suitable.

Mr. Ford moved that an amendment to the resolutions in favor of forest tree culture be added.

Carried.

Mr. Dart moved that a committee of three be appointed, with Gen. Nutting as chairman, to recommend a list of hardy fruits.

The Chairman thought the movement unwise, as tending to provoke discussion.

Mr. Latham thought the committee ought not to have nurserymen upon it, as provoking rivalry and discussion.

Judge Baker suggested a committee of five, and the committee was appointed as follows :

Messrs. Nutting, Harris, Howe, Miller, and Latham.

Here the Chairman announced a communication from R. J. Mendenhall, stating that Marshal P. Wilder requested that delegates, two in number, be appointed to the Boston Pomological Convention.

Judge Baker wished that the President should appoint a Committee on Premiums.

The Chairman suggested that a committee had already been appointed.

Judge Baker moved that two more be added to said committee.

Carried.

On motion, Messrs. Smith, Grimes, Goodyear, Fleisher, and Cannon were added.

Mr. Harris offered a resolution, recommending, on the part of the Society, the Concord grape for general culture.

Judge Baker wished to bring up the matter of compiling the Society's report.

Gen. Nutting wanted a committee appointed to report upon all the articles on exhibition.

Carried.

Mr. Willey, as Chairman, and Messrs. Tuttle and Col. Stevens were appointed to act as other members of the committee.

Carried.

Mr. Elliot moved that after the committee had acted that the members here from Wisconsin be permitted to take any specimens home for exhibition, to show what we are doing here in Minnesota.

Agreed to.

A motion was offered and carried, to have the Chairman, Secretary, and Col. Stevens act as a committee to see what would be the cost of compiling a report of the proceedings.

A resolution was then proposed and carried to adjourn to 7 o'clock.

THURSDAY SESSION.

Meeting called to order by the President.

The President announced the names of the following delegates, to attend the meeting of the State Agricultural Society :

Gen. Nutting, T. G. Gould, T. T. Smith, O. F. Brand, Phillip S. Harris and Truman M. Smith.

Committee on Fruit List reported as follows :

First List—Tetofsky and Duchess of Oldenburg for early ; Fameuse, Haas, Plumb's Cider, for Autumn and early Winter ; Ben Davis for Winter.

Second List—Red Astrachan, St. Lawrence for Autumn ; Fall Stripe, Perry Sweet, Tallman Sweet, Golden Russet and Little Romanite.

Pears—Flemish Beauty.

Cherries—None.

Plums—Native.

Currants—Red Dutch, White Grape, Victoria and Black Naples.

Grapes—Concord, Delaware.

Strawberries—Wilson's Albany.

Raspberries—Seneca, Doolittle and Philadelphia.

On motion the report was accepted.

A motion was made to adopt the report.

Several amendments were made to add other varieties to the list of strawberries, which were lost.

Mr. Brand moved to amend by placing the Saxton third on the first list.

After an animated discussion the amendment was lost.

Mr. Brand moved to amend by placing the Fameuse on the second list, which was carried.

On motion of Mr. Baker, the motion, as amended, was adopted.

A communication from C. C. Andrews was read and placed upon file.

The Treasurer made the following report which was accepted :

TREASURER'S REPORT.

January 16, 1873.

Cr.

By balance on January 10, 1872	\$54 33
By thirty-one memberships	31 00—85 33

Dr.

To hall for winter meeting, 1872	\$25 00
To Deiyoue for meals	2 40
To buss hire	1 25—28 65

Balance in treasury, January 13, 1873	\$56 68
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A motion to adjourn was lost.

Truman M. Smith read an essay on Grape Culture. The essay was accepted and ordered to be published in the proceedings of the Society.

After the essay, an animated discussion was carried on about cultivation.

FRIDAY MORNING.

The President called the meeting to order.

First thing in order, the President said, is the appointment of standing committees. As he wanted the aid of the workingmen, he desired to await the arrival of some other of the officers of the Society before appointing such.

Mr. Smith said that no one regretted more than he did, the loss of Mr. Mendenhall as President, as, besides his other qualifications, he was the best informed on entomology of all others. He wished him on that committee, if he could be got to serve.

Col. Stevens hoped that we would yet have the address the Ex-President was to deliver.

The Chairman called for any reports that might be ready.

Mr. Harris, from the committee appointed last winter, presented a report on seedlings, as follows :

Mr. President and Gentlemen of the Horticultural Society :

Your committee on seedlings submit the following report :

The exhibition of seedling apples, at the State Fair, showed that more than 50 varieties are fruiting in this State, that are in size, beauty of appearance and flavor, equal to any of the old standard varieties grown in the older States, and there is a good prospect that from that number, some will be found possessing qualities of hardness and long keeping, early and constant bearing that is so earnestly desired to meet our present wants. The first premium was awarded to Jacob Kline, of Union, Houston county, upon a large and fine autumn apple. In the confusion that prevailed upon the breaking up of the fair, and as he had on exhibition several fine varieties and the viewing committee could not be found, it has not received a name. Our attention has not been called to any seedlings upon the tables at this meeting.

A seedling strawberry, raised by Geo. B. Wright, of Minneapolis, was exhibited at the summer meeting, which we think should receive further notice.

JOHN S. HARRIS.

TRUMAN M. SMITH.

Also the following report from the Committee on Nomenclature :

The Committee on Nomenclature beg leave to report that there is but one member of the committee present, and as far as our knowledge of winter grown fruits extends, the specimens upon exhibition are rightly named, but there are some with names lost, which we are unable to identify.

JOHN S. HARRIS,

Chairman of Committee.

Col. Stevens moved that the report be accepted and adopted, which was agreed to.

Mr. Elliot introduced the following resolution :

Resolved, That the whole matter of publishing the proceedings of this Society be referred to a committee of three.

An amendment offered by Mr. Dart, instructing the committee to abridge, as far as possible, without materially damaging the report, was accepted by Mr. Elliot.

Carried.

Col. Stevens said that for the information of members he would state that the entire proceedings would be fully published in the *Farmer's Union*, and if any wanted copies they could leave their names with Mr. Harris, the Secretary.

On Entomology, the Chairman would appoint Messrs. R. J. Mendenhall, McKinstry and Harris.

Mr. Harris hoped that if any one found any new insect, he would preserve it and submit it to the committee. A little carbolic acid would kill one, and alcohol would preserve it.

Col. Stevens, from the Committee on Compiling a History of the Society, reported that the cost of printing the proceedings entire would be \$950 to \$1,000, all the St. Paul offices having been consulted.

In reply to a member, Col. S. said that a great deal of search would have to be made at a great deal of expense.

Report accepted and adopted.

Inquiries were made as to the postal law on packages.

The President proposed a resolution, that as this was a matter of importance, our members at Washington be communicated with, to find out what the law is, and if packages could not be labeled that the law be altered.

Moved that such action be taken, and motion carried.

Mr. Willey stated that it was desirable to send fruit by mail, but their postmaster, backed by the Postmaster General, stated that it was against the law. It ought to be changed.

Mr. Stewart thought that persons ought to be privileged to append the name of the sender, but he had been refused.

Other members had had different experiences.

Mr. Gould said the thing to be arrived at was the law in the case, that is, as to what the postmaster was permitted to do.

Col. Stevens said the postmasters at St. Paul and Minneapolis both, were devoted friends to the Society, and he was sure would do all they could within the law to help the Society.

The committee on flowers was announced: L. M. Ford, chairman, and Messrs. Nutting and Baker, members.

Mr. Brand moved that the wives of members be constituted honorary members.

Judge Baker said that if we could have ladies to co-operate with us, he would be glad to see it. We were yesterday honored by the presence of Mrs. Col. Hewett, who had done much to incite a taste for flowers, and he hoped the ladies would be permitted to become both voters and debaters: to become, indeed, active members.

Motion carried.

Col. Stevens moved that the thanks of the Society be tendered Messrs. Tuttle and Willey, of Wisconsin, for the useful and instructive information they had contributed to the Society.

Carried.

Mr. Willey, for himself and on behalf of Mr. Tuttle, thanked the Society for the compliment, and had to say that they had received much advantage themselves from the visit hither.

Col. Stevens moved a vote of thanks to the people of St. Paul for the hospitality received by the members of the Society in their visit here, which was agreed to.

Mr. Ford moved a vote of thanks to those persons who had aided in fitting up the hall, and also to the Chamber of Commerce for its generosity in lighting and warming the hall.

Judge Baker wished to include the Janitor in the vote of thanks, who had certainly been indefatigable in attending to our comfort.

Mr. Elliot proposed to include the railroads—the Sioux City, Superior, and Northern Pacific—and regretted not being able to extend the same vote to other roads.

Mr. Willey, from the committee to report upon the articles on exhibition in the hall, made the following report :

REPORT OF O. S. WILLEY.

MR. PRESIDENT:—Your committee, to whom was referred the examination of articles on exhibition, beg leave to report:

We have had the same under consideration, and can only say, with one of old, "Well done, good and faithful servant, thou hast not hidden the talent that has been given thee, shortly thou shalt have five others added thereto."

The impression on entering your hall is truly wonderful, and to say that the products of fruits, plants, and flowers, surpass the expectations of the most sanguine, only tells the story in a feeble manner.

Your committee cannot be very explicit in their report. The samples before us are all very fine, and show a greater list of varieties under cultivation than we had expected grew in your State, and it gives us much pleasure to record the fact, that the Minnesota Fruit Growers' Association, arising from the slough of crabish dependency, are henceforth to eat of such fruits as are pleasant to the taste and good to look upon.

Among the many exhibitors we find, W. E. Brimhall, of Ramsey county, showing some dozen varieties, including Plumb's Cider, Haas, Fameuse, Perry Russet, Tallman Sweet, Jennette, Soulard, Hyslop, Montreal Beauty, Virginia, and a seedling without name. Of early apples he has fruited Tetofsky, Early Harvest, Red Astrachan, Saxton, Transcendents, Yellow Bellflower, and Golden Pippin.

J. S. Harris showed Ben Davis, Bethlehemite, Rawle's Jannet, English Golden Russet, Westfield Seek-no-further, Grindstone, Red Cheeked Pippin, Northern Spy, Winter Wine Sap, Golden or Fall Pippin, Long Stem, Stone, Red Romanite, Tallman Sweet, Belmont, Lady Apple, Bullock, Pomme Gris, Sweet Pear, Hyslop, some twenty-one varieties. He raised also, among the summer and fall kinds, Duchess of Oldenburg, Red Astrachan, Fall Stripe or Saxton, Early Harvest, Sops of Wine, Tetofsky, Fameuse, Fall Wine, Transcendents, Rubicon, Scollop Gilliflower, Keswick Codlin, Kentucky Sweet Russet, Price's Sweet, St. Lawrence, Bailey's Sweet, Benoni, Perry Russet, and some half dozen other kinds, such as Autumn Strawberry, Early Strawberry, White Astrachan, etc.: about fifty varieties fruited in his orchard.

F. G. Gould exhibited the Wealthy, from Mr. Gideon's orchard.

Truman M. Smith exhibited Ben Davis, Tallman Sweet, Little Romanite, Seek-no-further, Soulard Crab, and three or four kinds without name. Grapes—Diana, Delaware, Martha, Iona, Israella, Isabella and Adirondack. Ten varieties of wines—five of grape, two of currants, two of raspberry, and one of strawberry. Canned raspberries, two kinds raspberry jam, seven kinds jelly.

Of his wines, we can but say, in justice to Mr. Smith, that a Temperance Committee, who can stand but one round, are of the opinion that his wine is very fine, but ask for further consideration.

John Hart, of Winona, exhibited Ben Davis, Tallman Sweet, Limber Twig, Winter Wine, Perry Russet, Black Gilliflower, Jefferson County, Wagoner, Monstrous Pippin. Rawle's Janet.

Wyman Elliot, of Minneapolis, two varieties plums, three lots currant wine, representing one, two and three years.

The plums looked very fine, and show a commendable spirit in an attempt to improve our native fruit.

Mrs. W. G. Hendrickson, of Ramsey county, fine samples canned currants, plums, transcendents, two kinds jelly, etc. The Transcendents were put up like peaches—a new idea.

Mr. Thomas Ramsden exhibited the *Duchess* in very perfect condition, and it is but just to say of this effort that he has placed the Society and people of the Northwest under great obligations for the very free manner in which he has made the process known to the world, and this suggests the remark that we need more knowledge upon the subject of keeping fruits of all kinds.

Wm. G. Smith, the Summit avenue florist, had on exhibition a few very choice plants in bloom. We noticed a fine *Camelia* and *Azalia* in full bloom, a pure white, two kinds monthly *Carnations*, red and white, also one variety of the *Bouvardias*, making a very pretty show.

Mrs. Smith sent in a pair of bouquets made up of ornamental grasses, the prettiest we have seen in a long time.

G. Webster Peck sent in a splendid lot of bouquets arranged from artificial flowers, in some fancy vases. They add much to the appearance of the hall.

Col. Harris, of the Superior road, had on exhibition three diplomas given to the Land Department of that road by the American Institute, of New York, one for grains, another for vegetables, and a third for fruits.

L. B. Wait showed many beautiful pictures of vegetables, grains and grapes, also splendid flower pieces.

James Brownell sent in many fine pictures in beautiful frames, all of which added much to the beauty of the hall, and for which the Society are duly thankful.

C. B. Sheldon showed several plates of Delaware grapes in very fine condition. Mr. S. also finds the *Iona* an excellent variety for keeping.

Your committee are much pleased with the fruit on exhibition, and commend your efforts to the best interests of the State.

Your committee find the fruit to be well ripened, of an excellent, rich flavor, and fine grained. But we also recognize the fact that that miserable enemy, the Codlin moth, has, to a very slight extent, made its appearance, and you cannot do better than to commence a fight upon it at once, and fight faithfully upon this line, that it spreads no farther.

There are some most beautiful flowers and pictures on exhibition, of which J. B. Fleischer shows very fine plants; among them we notice fair century plants, begonias, pinks, primroses, *Libonia*, adding much to the appearance of the speaker's desk.

In conclusion, we would say that home, sweet, sweet home, of which the poet sings, would not be complete without Pomona's art. The apple, beautified in its russet hues, or radiant with the maiden blush, sweet to please the palate of the more delicate, or tart, to remind the participator of those good old times in his youth, when around the great fire-place, at the East, he has prepared his winter barrel of dried apples and cider; pears in their melting, buttery deliciousness; plums in all the varied colors of purple, red, blue, green to golden, violet to brown; cherries, beautiful in their redness, a strong reminder of the curses we think, when the birds gobble more than their share; the grape, climbing in such luxuriousness over stake, trellis, barn, or tree-top; or the currants, supplying a place that nought else can fill; and the strawberries! how our mouth waters at the thought of the beds and their prolificness that we left at our eastern homes, but since our sojourn at the West we had almost forgotten, and with each returning thought resolve and re-resolve to forthwith plant another, and all aids to make that home, our home, a paradise on earth. Yes, my friends, the day is passed when the success of fruit growing in the Northwest is to be considered an experiment, and no home can now be considered complete without its fruit garden or orchard, and the one will almost invariably lead to the other.

'Tis true, there are annoyances, griefs, disappointments, and much labor connected with the culture of fruit, but what else is there that is exempt? Indeed, the anxious, persistent fruit grower might, with some degree of propriety, say to his fellow-men, who are pointing the finger of scorn at his labors, and who sneeringly reject the proffered offer of fruit in the family every day in the year, on account of labor and disappointments in the business, those of you who are exempt from trials and disappointments, cast thou the first stone; but I say unto you that this stone, (fruit growing) which the builders (early settlers) rejected, the same shall become the head of the corner, or in other words, the head and front of all our industry. A few weeks since, a well-to-do farmer on 80 acres of land, said to me, "Eight years ago I set, at the urgent solicitation of an agent, 140 apple trees, and for two years last past I have realized more money from that orchard, covering but little more than an acre of land, than from the remaining 79 acres." Nor is this an exceptional case. A farmer in Jefferson county, Wisconsin, raised 150 barrels of fine, fair apples the past very poor season, on about 10 acres of land. Here, then, is \$500 to \$600 from an orchard only 10 years planted. Will wheat, corn, pork or beef do better with less labor? I fear not.

The climate of this State, and the trials of fruit growers are not essentially different from

those of Wisconsin. In some respects you have the advantage. The farther south we go the more changeable is the climate, and greater the extremes from heat to cold; and in like manner the farther north we travel the less variable will be our temperature. There probably is a degree of cold that will kill most fruit trees. The oranges in Florida, the peaches in Illinois, some apples in Wisconsin, and some other apples in Minnesota. But this does not always follow to the same extent, in the same State, on the same varieties. For instance, I have some good healthy trees of Rhode Island Greening and Spitzenberg, but because of these isolated successes no one would think of planting whole orchards of these acknowledged tender sorts, but rather look for his success in those longest tried and most successful varieties. The enthusiasts have done a good thing for the country in the extensive planting of crab trees. Many varieties of them are very much better than no fruit, and with such varieties as Transcendent, Hyslop, Marengo, and Tetofsky, successfully growing, trees healthy as they invariably will be—and the taste of the cultivator will surely increase—his desire for more and something better will be expressed by an enlargement of his orchard; in doing this he looks around him for some hardy variety, and in the absence of some known desired sort which is succeeding in his neighborhood, he naturally takes to the press, and this proves his educator, and thus he is led on step by step till his efforts are crowned with success.

And this leads me to remark upon a thought that has found an abiding place in my brain, for sometime. I refer to the education of the people, the *whole people*. The masses are ignorant; not but that there are many well informed people, for, as a whole, we are not an ignorant set, but you will remember I am talking to you horticulturally, and it is from this point of observation that I wish to view things.

How are we to expect a man to succeed in any business about which he knows nothing? And how is he to be educated except by reading, or study, and practical experience? Horticultural reading, by which I mean the short, practical papers, which we find in almost any agricultural paper, which tell of the life experience of the cultivators. Perhaps I am wandering, but I wish to fully impress it upon your minds that at least one-fourth of the people do not take any paper; one-half only take a local or county paper, devoted to neighborhood and political quarrels; one-fourth take the leading political paper of the metropolis of your State, and about one-fourth of these take an agricultural paper and are posted, to some extent, in the horticultural successes of the State.

Now, this briefly sets forth the kind of element or stock the nurserymen have to deal with, upon which to build their business, and from this class, also, they are to get their curses and to hear the wailings, and, shall I say it? the gnashing of teeth, of disappointed expectations.

You ask the remedy: forcibly resolve yourself into a committee of the whole, for the relief of the people horticulturally. Let every one within the sound of my voice, make a special effort to circulate agricultural reading, and when there can be a general desire, and hence a general reading of this class, then, and not till then, will your troubles, in a great degree, be cast away, and then you will be called upon for the best hardy trees, and not eastern sorts known in our boyhood days, and long since discarded by every intelligent western horticulturist.

All of which is respectfully submitted.

O. S. WILLEY,
Chairman.

Moved that the report be accepted and adopted.

Carried.

JOHN SHAW.

The committee to whom was referred that portion of the address of Elder Ely, at the annual winter meeting of 1872, in regard to a biographical history of the late John Shaw, Esq., the pioneer of the Rollingstone Valley, as well as the first man who planted the seed of the apple in Southern Minnesota, would report:

That, from all the information they have been enabled to obtain, it would appear that the first care of Mr. Shaw, upon leaving the land of his birth and embarking for that of his adoption, was to gather up and export, with his loved family and his household treasures, the seed of the apple, so that in the future, his new home and those who settled around him could enjoy the luxuries as well as the comforts of life. Those of us who are pioneers will remember how we, upon our advent into our new western home, wondered if fruit would grow here. Many of us neglected to bring with us the seed, or the trees to propagate it.

Not so with Mr. Shaw. He proposed that the beautiful wilderness should bloom with the golden apple. The native rosebuds of the prairies and the wild flowers that gleamed like sunbeams, were, in his estimation, capable and worthy of neighbors. He would plant fruit so that the useful should mingle with the ornamental. This one act of his life indicates that Mr. Shaw was a gentleman who was fond of the beautiful. It established the fact that he was a philanthropist and a public benefactor. It showed that he was far-seeing; that he was looking for the interests of those who were to follow him. Had it pleased Providence to hand his life down to this day, this Society would have honored him more than most any of its members. Cut off in ripe manhood, and at a period of usefulness, all that is left for the Society is to cherish his memory. A stranger, personally, the result of his good deeds brings him very near to us. His name will be forever associated with the fruit growers of the State.

The committee would add that Mr. Shaw was a man of enlarged ideas, positive but gentle. He was one of the best of neighbors. No earthly power could move him from what he thought was right. His mind was copiously stored with useful and instructive information.

It is a mournful pleasure for the Society to know that his remains are gently resting in Minnesota soil. The Society will be pleased to learn that all the members of his family are residents of the State. They are among our most useful and respected citizens. His life, in brief, may be stated as follows:

He was born in Lee, New Hampshire, in 1795. At the age of eighteen, he, with the rest of his father's family, moved into Exeter, Maine, where, for several years, he followed the occupation of a farmer, and afterward, in connection with farming, entered into mercantile and manufacturing business. At the age of twenty-seven he married the daughter of Dr. Benjamin French, of St. Albans, Maine, who still survives him. For thirty years he resided in the village of Exeter, where all his children, eight in number, were born. For a time he was remarkably successful, and accumulated quite a large property for that time and place. In 1836 the sudden death of his eldest son, a promising boy of nine years of age, was an affliction from which he seemed never to recover. From the time of that event he became unfortunate in business, and met with serious losses. In 1851 he came west to retrieve his shattered fortunes, and seek a new home for his family. He came to Minnesota and took up a claim about six miles from St. Paul, in his own name, and another at Cottage Grove, in the name of the late Major P. P. Furber, intending to settle at the latter place. The next year, while returning with his family, he fell in with the Rollingsstone Company, and was induced to join them. He reached Galena, Illinois, the next day after the last boat of the season had left the levee, and was obliged to remain in that city during the winter. The next spring, on the opening of navigation, he, accompanied by his two sons, came up the river to Rollingsstone, now known as Minnesota City. In this new country, exposure and overwork brought on congestive chills, of which disease he died July 14th, 1852, at the age of 56 years. He was buried at Minnesota City, but owing to the rapid settlement of the country, the building of railroads, and other changes, the place of his burial was lost sight of, and for twenty years the location of his grave remained unknown. In June last, while Mr. Ely, of Winona, and others, were seeking for the graves of the early settlers, one was found, marked by a head-board, bearing the name of John Shaw, with the date of his death. His remains were afterward removed to Minneapolis for re-interment in Lakeside Cemetery.

Before starting for the west, Mr. Shaw obtained from his neighbors a nail keg full of apple-seeds, and notwithstanding the universal prophecy, that apples could never be raised in Minnesota, planted them on his claim at Minnesota City, and from this beginning has sprung one of the finest orchards in the State.

Mr. Shaw was all his life time an earnest advocate of the Temperance Reform, and was among the foremost in the ranks of Abolitionists. His radical views on these subjects, and the fearless expression of his sentiments, made him the object of bitter persecution by anti-reformers. But in the twenty years that have elapsed since his death, many of those who once so bitterly opposed him, now revere his name, and acknowledge that his views were just and right.

Many such testimonials have been offered by his old New England neighbors, and by them his memory is tenderly cherished.

The prominent and ruling quality of his character was his unwavering faith in, and unswerving devotion to ideas and opinions once deliberately formed, and this as well in and about the common and practical affairs of every day, as the higher concerns of morality, politics and religion. To this persistence in the face of discouragement, may, perhaps be attributed the results which have probably settled the question of fruit culture in Minnesota.

Gen. Nutting moved that the thanks of the Society be extended to the committee for their valuable report, which motion was adopted.

The Secretary, for the past year, Mr. McKinstry, was called up by the mention of a vote of thanks for his services, and stated that his engagements were such, in the future, as to prevent him from giving any attention to the duties of that office, had he been still in the position.

Gen. Nutting thought it would be impossible to publish the entire proceedings of the Society, and, indeed, that it would be inexpedient to publish the doubts and struggles of the Society for its first few years. He thought that a closely written history of the Society, with a two years' history of the Association, since it occupied a more established position, would be sufficient.

Col. Philip Harris took the same view of the case as Gen. Nutting; he did not think it would be profitable to anybody.

Judge Baker said that these hard experiences were what was wanted, for the information of other States west of us yet to spring up.

Gen. Nutting said that he was glad they had succeeded, and now he wished to cast the whole thing behind him. That if we wished to publish this great compilation we could not get Legislative aid.

Col. Stevens said the difficulties were very great in getting such a compilation, that the nine years' record were scattered everywhere, from here to Rochester and Omaha.

Gen. Nutting said, let the people of Omaha keep the four years' record they already had, that was enough for them. The Legislature cared nothing about our failures and disappointments. They wanted the evidence of our success.

Mr. Dart thought a book small enough to be readily perused would be the most valuable; we wanted information by the shortest cut. We ought to condense this matter, make abstracts, and we should better meet the wants of the age than by anything more extensive.

Mr. Elliot moved to dispose of the whole matter by referring to a committee of three.

Col. Stevens thought something ought to be said about the efforts of the pioneers in this struggle, Dr. Ames, and others, to whom all the success witnessed here to-day, was due. He, himself, proposed to receive nothing for his own labor—in the compilation—only expected to incur cost for a clerk to transcribe facts. He thought such a history ought to be given.

Mr. Ford seconded Mr. Elliot's motion to refer.

Mr. Dart moved that the committee be instructed to condense said history as far as possible.

The Chairman named as the committee, Col. Stevens, Judge Baker and Wyman Elliot.

The Chairman named the following committees:

On Orchards and Vineyards—O. F. Brand, Faribault; C. P. Cook, Garden City; P. A. Jewell, Lake City; C. B. Sheldon, Excelsior; Lewis Martin, Anoka.

On Evergreens—J. T. Grimes, Minneapolis; A. C. Hamilton, Winona; I. F. Gilmore, Faribault.

On Ornithology—W. E. Brimhall, St. Paul; O. H. Page, Pleasant Grove; F. G. Gould, Excelsior; Professor Sawyer, Chairman, State University.

REPORT ON PRINTING.

The committee to whom was referred that portion of the proceedings in relation to the probable cost of gathering, entering, editing, and compiling the transactions of the State Horticultural Society, from the beginning up to this time, and for preparing the same in the proper shape for publication, would report that after advising with the best authorities on the cost of the same, would estimate the sum of \$1,000 necessary for such purpose.

Gen. Nutting moved that the present Secretary and Col. Stevens, be a committee to name 15 members to get a regular act of incorporation for the Society. The reason he named 15 was so as to include the old members.

Carried.

Moved to adjourn until 2 P. M., which was carried.

FRIDAY AFTERNOON SESSION.

The Chairman called the meeting to order.

Judge Baker offered the following resolution:

Resolved, That the thanks of this Convention be expressed in favor of the great services of Peter M. Gideon, one of the oldest and best fruit growers of the State, that we regret his absence from our present deliberations.

Carried.

On motion, Mr. W. Wales was elected Secretary *pro tem*.

The committee recommending the resolution of this morning is as follows:

J. S. Harris, J. H. Stevens, Truman M. Smith, Levi Nutting, A. W. McKinstry, Wyman Elliot, A. Stewart, L. M. Ford, O. F. Brand, J. T. Grimes, P. A. Jewell, D. A. J. Baker, W. E. Brimhall, Thomas Ramsdell, Peter M. Gideon, R. J. Mendenhall.

Judge Baker moved that the name of D. A. Robertson be inserted.

The President moved the name of Mr. H. J. Brainard.

On motion of Capt. Paist the report, as amended, was received and adopted.

The next business in order was the appointment of a Fruit Committee for each district.

Judge Baker moved that the Chair appoint such committee, which was agreed to.

The report of the committee on Evergreens next came up for discussion, and the list was read:

Norway Spruce, adopted; Scotch Pine was named; moved as a substitute, Balsam Fir.

Judge Baker advocated the Scotch Pine.

Mr. Hamilton preferred the Austrian Pine.

Mr. Ford said the ladies usually selected the Balsam Fir.

Judge Baker said the Scotch Pine had a beautiful color, and he would go for the Austrian Pine along with it.

Mr. Brimhall advocated the Balsam Fir.

Mr. Smith agreed with Mr. Hamilton that the Balsam Fir did decay, in the manner stated, and the Scotch and Austrian Pine never did this. The Austrian Pine was a majestic and beautiful tree, almost beyond comparison. The Scotch Pine did not, at first, grow up straight, but it improved, and was a good tree for wind breaks. Mr. Grimes had the most beautiful place in Minneapolis, and the trees at Mr. Grimes—the Scotch Pine particularly—spoke for themselves.

Mr. Hamilton said that the Scotch Pine developed splendidly. He did not advocate the value of any tree he had, because he wanted unbiased action in the premises.

Mrs. Judge Baker said that there was nothing so beautiful in their grounds, amongst all the variety they had, as the Austrian Pine; it was hardy and beautiful, and her experience was that the Austrian Pine was before all others.

Mr. Ford's motion was put and lost.

Mr. Paist moved that the Austrian Pine should stand second.

Carried.

Judge Baker moved that the Scotch Pine be third.

Carried.

Mr. Ford moved that Balsam Fir be fourth on the list.

Carried.

A member inquired if the Balsam Fir changed, as was the case in Illinois.

Mr. Elliot thought not.

Motion was next made to adopt the following

LIST FOR GENERAL PLANTING.

1. Norway Spruce.
2. Austrian Pine.
3. Scotch Pine.
4. Balsam Fir.
5. American Arbor Vitæ.
6. American Black Spruce.
7. White Spruce.
8. Red Cedar, when clipped.
9. Siberian Arbor Vitæ, for small yards.

American Arbor Vitæ next; next, American Black Spruce; White Spruce next; Red Cedar, when clipped.

Carried.

Siberian Arbor Vitæ.

Mr. Smith (Mr. Elliot in the Chair) moved that it be added, for small yards.

Carried.

Moved that the list be adopted as amended, as a whole.

Carried.

ORNAMENTAL TREES.

Mr. Brimhall moved that the Mountain Ash be put first on the list to be recommended as an ornamental tree.

Carried.

In answer to an inquiry, the Chairman said they grow here in Minnesota 25 to 30 feet high.

Judge Baker had seen them elsewhere 40 feet high.

Mr. Hamilton said the sap suckers kill these trees completely by girdling them, which was something to consider.

Mr. Ford suggested the White Birch.

Carried.

SHADE TREES.

White Elm, first on the list; Box Elder, next; Rock Maple, Soft Maple, Butternut, Walnut and Hackberry.

Carried.

Judge Baker moved that the Basswood or Linden, be inserted next the White Elm.

Carried.

White Ash.

Carried.

TREES FOR WINDBREAKS.

Judge Baker moved to place the European Larch in the list of evergreens, for its wood and for a windbreak.

Mr. Hamilton moved that it be placed amongst the ornamental trees.

Mr. Gould testified to the worth of the Larch.

Mr. Truman M. Smith gave his experience with some 800 Larch trees, and his testimony was, for one season they had done well.

Mr. Brimhall testified the same way.

Mr. Gould said that in Scotland they were said to have flourished on, and reclaimed the most barren spots.

Mr. Brand said that although the Larch was valued as a good timber tree in Europe, it did not prove so here. It was, however, a rapid grower, and hardy.

The President said that no matter what were the timber qualities of the Larch, if it would protect the people on the prairies, it should be adopted.

Mr. Willey said it was valued highly and planted largely in Wisconsin.

It was moved to place the Larch in the list of evergreens and shade trees, both.

Carried.

It was moved to adopt the American Larch as a windbreak.

Mr. Elliot testified to its good qualities.

Carried.

The Beech and Hemlock were next discussed.

Mr. Hamilton said he could do well with them if taken when small.

Mr. Smith, the President, had moved a large Hemlock with extra care.

Mr. Tuttle said his experience with the Hemlock was, that it would grow if taken up with dirt enough. He believed in planting almost any trees in a

prairie country, whether forest trees or trees that came from the hands of the nurseryman.

Mr. Dart thought that only tolerably good trees should be recommended, as, if they failed, those who tried them were proportionately discouraged.

Mr. Hamilton wished a few words as to the time to plant. He found, in selling trees, that people wanted large ones, but that was not good policy, either for seller or buyer. He advocated, on every account, the setting out of small trees.

Mr. Howe said it seemed of little use to recommend trees that people would find it hard to get. The oak grew rapidly. The acorns he planted sprang up rapidly, and the oak grew on all soils. It was a strong and hardy tree and a capital tree for windbreaks.

Mr. Elliot offered the following resolution, which was adopted :

Resolved, That this Society recommend to persons the setting out on the prairie of small trees from the forest as forest tree seedlings.

LIST OF TREE SEEDS FOR PLANTING.

Cottonwood seed, Silver or Soft and Sugar Maple, White and Brown Ash, Box Elder, White Elm and oaks.

This list of tree seeds grows well over our State along the rivers and water courses, and accessible to all.

Ex-Governor Marshall, being present, was called upon for some remarks.

He said he had been too busy to attend the meetings of the Society regularly, but he took a deep interest in its proceedings, and considered what it had accomplished as invaluable. He had noticed a movement to publish a history of the Society in some compact form, and he hoped it would be done. He had experienced the same trouble mentioned by one gentleman—the injury done by the birds to the Mountain Ash, and he hoped some remedy would be found for it. He hoped to be excused from further remarks, as his experience had not led him much into horticulture.

WINDBREAKS.

Trees for windbreaks came next under discussion, and Mr. Brimhall having recommended the lombardy poplar, Mr. Ford moved that the cottonwood be added to the list, which was agreed to.

Mr. Ford offered the following resolution, which, on motion was carried.

WHEREAS, The subject of forest tree culture is one of vital importance to our State at large, therefore

Resolved, That a committee of three be appointed to bring before the Legislature the matter of enacting suitable laws for encouraging forest tree culture, especially in the prairie portions of our State.

The Chairman named the committee as follows :

Messrs. L. M. Ford, C. H. Clark and Philip S. Harris.

Mr. Dart offered the following resolution :

Resolved, That it is the sense of this Society that 20 feet is the proper distance between orchard rows, and that trees should branch at the height of three to four feet.

Judge Baker said he would change three to four feet, to three to six feet.

Mr. Dart advocated his resolution at some length.

Mr. Tuttle said that the whole thing should be determined by the manner of its growth. He did not believe in high tops. He thought three to five feet best. As to the distance to plant trees, they should have room. Orchards that are crowded only bear on the outer edge. If the ground is too much shaded, you don't get much fruit. By throwing out one-quarter of your trees and putting in evergreen, you get more fruit. His trees were mostly 30 feet apart, and he considered that near enough. He, Mr. Tuttle, had been asked if an evergreen hurt a fruit tree. He thought not, although oaks would do it.

The Chairman and Mr. Brimhall thought evergreens a benefit rather than otherwise, to fruit trees.

Mr. Ford moved that the distance be designated as three to five feet high, and 30 feet apart, with evergreens between.

Mr. Howe said his evergreens had outgrown his apple trees so as to overpower them. He thought when the evergreens got valuable one hated to part with them, and they were therefore left to injure them.

Mr. Dart feared this talk about evergreens would be considered a trick of the nurserymen to sell evergreens along with their fruit trees. He thought the ground ought to be cultivated between the trees. He thought they ought to stand 20 feet apart.

Mr. Ford's amendment was adopted.

The question recurring upon the original motion, was adopted as amended.

Mr. Brand wished to recommend the red fruiting barberry as a hedge plant.

Mr. Ford moved it be adopted as an ornamental hedge, which was carried, and the original proposition as amended was then adopted.

Mr. Brand moved that the chestnut be recommended as an ornamental tree.

The Chairman stated that his had always been killed back after getting eight or ten feet high. He thought it ought not be recommended as an ornamental tree.

Mr. Tuttle did not believe chestnuts could be grown in the State.

Mr. Brand then withdrew his motion, stating that he had merely wished to draw out the experience of others.

Mr. Ford moved that the arbor vitae—both kinds—be recommended by the Society as a hedge plant.

Agreed to.

The Chairman suggested that the cranberry should be noticed as of importance to the people of the State.

Mr. Dart called for some attention to the subject of insects in the State, and gave a statement of his experience with an insect that eats into the limbs and buds of small trees especially. The insect in question was generally hard to discover, dropping to the ground and making themselves invisible whenever the tree was touched. He hoped the members would be on the lookout for the insect in question.

Judge Baker moved that when we adjourn we meet subject to the call of the President.

Carried.

Mr. Dart moved that a committee on By-laws be appointed, which was agreed to, and Messrs. Elliot and Dart were appointed said committee.

Judge Baker wished to hear something from Mr. Tuttle about transplanting trees.

Mr. Tuttle, in response, said he had usually transplanted in the Spring. He had transplanted evergreens from the middle of April to the middle of May, and sometimes up to June. He had had no difficulty, and did not think one tree in a thousand need be lost. The roots ought not to be dried at all. With careful handling there was no difficulty. Evergreens dug up and sold over the State were very likely to perish. If trees were pulled up and carried off, and the resinous sap congealed, they would be likely to die.

Mr. Brand gave his experience, and stated that he had been very successful, with the requisite care.

Mr. Ford thought, on the whole, that in the latter part of May, just as they were beginning to grow, was the best time, and he deprecated, along with Mr. Tuttle, the exposure of the roots. In Summer planting, the arbor vitae had done well in July; some in August; that in July showed the best results. The Scotch Pine, Austrian Pine and Red Cedar had not been so successful, but with Balsam Fir he had done better.

The Chairman did not believe that drying hurt the tree so much as light. He had nursed trees dried by delay in reaching him, but by care and watering with warm water, they recovered.

Mr. Brimhall thought the best time to set evergreens was in the Spring, when they were just ready to bud.

Mr. Elliot offered the following resolution:

Resolved, That we recommend to persons, for general planting of evergreens, to procure none but small trees, those that have been transplanted once or twice. And that we recommend the time for transplanting from the 15th of April until the 25th of May.

Mr. Ford moved that the words "for general cultivation" be stricken out. The resolution, as amended, was then adopted.

On motion, the meeting then adjourned *sine die*.

The committee charged with the task of this compilation, would on concluding their labors, call attention to the fact elicited by the discussions of the Society, from year to year, since its organization, that in a great measure the trees and shrubs selected or pronounced upon as hardy, in the outset, have stood the test of experiment ever since. And in regard to preparing this volume, although an idea was entertained in the beginning of greatly curtailing and condensing the reports, it was found that to do so would really take from the work the very spirit and character of the narration comprised in the many discussions which have led to practical results; indeed, nearly all that makes it valuable, since it is quite as important in this particular instance to know

what are the causes of failure, as to know what has been the real basis of success.

In that regard, nothing that can be given could better indicate that resolute purpose to succeed which has marked the efforts of all; that patience in bearing repeated and heavy disappointments through years, which has finally been crowned with success. Moreover, no one can read these reports, and not feel and know that in all that has been done, there has been a cordially concurrent endeavor betwixt the members of the Society, as remote as possible from a narrow or selfish purpose; that they have acted towards each other, throughout, in a generous and brotherly manner, in the highest degree admirable and commendable. Freely acknowledging their mistakes and blunders as they worked their way, they—it will be observed—have just as freely announced for the common good any fortunate discovery or result obtained; have striven in a spirit of emulation *to help each other*, whilst pursuing a common aim to make Minnesota a fruit growing State, and all this in the face of countless prophecies that it could not be done. They have stood by each other in this matter until their annual meetings have come to be the pleasant gatherings, as it were, almost of the same household; their warm greetings as they hail the presence of one another, those which manifest feelings of respect and regard, tested by years of agreeable intercourse whilst engaged in a common and ennobling pursuit. They stand, at last, they may well say, triumphantly upon the mount they have toiled so hard and so long to climb; and year by year, the evidences accumulate that the importance of their labors to the welfare of the State cannot be overestimated.

All this is pleasant to note now; and in reviewing the past, the committee are glad to know that the people at large begin to appreciate what has been accomplished, evinced through the enlightened action of their representatives in the Legislature, in furnishing the means to place these results before the public of this and other States. And no one who desires to save himself from numberless sacrifices and vexations consequent upon repeated and costly failures in attempts to grow fruit, shade trees, flowers, etc., can afford to pass by the experiences which are so faithfully given by those who have finally reached success through trials innumerable.

The needful conditions for success, of climate, of soil, of methods of planting, of grafting, of pruning, of locations for orchards and so on, are given in such complete detail, that there is hardly a difficulty that may arise which will not be found already portrayed in some one's experience; and we repeat, these, at last are what make this volume peculiarly valuable; because these accounts left out, "condensed," or curtailed, the work would lose half, or more that renders it valuable as a minute and faithful record of the long continued struggle, undergone in the endeavor to bestow the boon of fruit growing on the people of a great commonwealth.

And if these labors and trials are of interest when scanned at this time, how much more so will they be many years hence, in the far distant future. They chronicle labors, and sacrifices, and discouragements, that ought not to be lost sight of for the benefit of those who are to come after us. They con-

stitute one of the most interesting chapters in the country's history, to show how apparently insuperable difficulties may be overcome by those in earnest in the struggle to which they are committed by circumstances.

The conclusion that must be arrived at in view of all this, is that the State of Minnesota is one peculiarly adapted to the growth of apples, especially, with the right kinds once selected, and the right culture bestowed upon them. Perfect as the apple is here, to more than an ordinary degree, in the absence of imperfections in growth, in knotty or rough surfaces, or indications of any sort of early decay, the quality and beauty of it has consequently extorted high commendation and admiration from the most enlightened fruit growers and men of science assembled in national gatherings for the consideration of these and kindred matters; and at last, thoroughly aware of this, none hereafter should have so much as a misgiving as to the good future in store for the people of Minnesota.

Further, as of interest to the people of other States and communities in regard to questions bearing upon this subject of fruit culture as dependent upon climatic conditions, the committee have deemed it important to give the very complete meteorological conditions and results of the region subject to the experiments chronicled in this volume, as these have been prepared by a most careful and competent gentleman, Wm. Cheney, Esq., correspondent in Minnesota of the Smithsonian Institute. Judiciously adapting—as he has done—the results observed, to the popular apprehension, by simplifying as much as possible the results arrived at for the period since the Society was organized and in the line of experiment, none can fail to see that if success has been achieved under somewhat exceptionally severe Winters, of late, the pathway open to us is easy, comparatively, in the future.

The committee commend their labors, or the results reached, to the kindly consideration of all interested in the matter discussed. Necessarily somewhat imperfect in some particulars, because the materials submitted to their hands were fragmentary and difficult to make perfect as a systematic and unbroken narration, they have done the best that circumstances permitted; and now submit the result, with a belief that their earnest endeavors, at least, in a right direction, will be appreciated by all concerned. It will be seen that by the course pursued in compiling the work; the labors and opinions of all have been set forth impartially, each being allowed to speak for himself. Believing that it would have seemed invidious to have done otherwise; to have selected the opinions and experiments of a few only, even of the most successful as representatives of the labors and trials of the whole body of fruit growers in the State, the work will be found not lacking in fidelity at least, even although it fail somewhat as a succinct and methodical narration. Presented in such shape, it is certainly a mine of experience, from which all interested may select whatever is of essential importance in endeavors at fruit growing, or whatever bore upon the undertaking in the infancy here of the experiments made.

The committee cannot conclude their work without calling the special attention of the reader to the character of the regular Annual Addresses

scattered through the volume, by the, for-the-time, presiding officers of the Society. Fortunate as they have been in taking widely different lines of observation in dealing with the topics appurtenant to fruit culture and the general progress of the State, these carefully considered addresses form a body of sound advice, of valuable information, of thoughtful reflection on what conduces to enlightened and substantial advancement, such as all who scan them will be glad has been, in durable form, saved to the State. These alone might well justify their preservation in the shape given, and we cannot doubt will be acceptable to all.

Finally, with no misgivings as to the great value of this publication in its general bearing upon the progress of the State in population, enlightenment and wealth, to say nothing of comfort and all that appertains to it, we commend it to the kindly consideration of all interested in the future growth and prosperity of the great Northwest.

Record of Meteorological Observations made at Minneapolis, Minn., by Wm. Cheney, correspondent of the Smithsonian Institute, Washington, D. C., for the years 1867 to 1872 inclusive.

1867.	Thermometer in the open air.				Barometer reduced to freezing point.			Rain and Snow.		Cloudiness.	Relative humidity in 100th parts of saturation.	Prevailing Winds.
	Max.	Min.	Mean.	Range.	Max.	Min.	Mean.	Range.	Depth of snow in inches.			
Months.												
January	38	*-32	8.33	70	29.611	28.672	29.085	.939	1.500	16 $\frac{1}{2}$	6.67	N. W.
February	44	*-30	14.11	74	29.503	28.437	29.022	1.066	1.120	10 $\frac{1}{2}$	6.20	N.
March	44	*-22	12.41	66	29.485	28.615	29.207	.870	1.275	12 $\frac{3}{4}$	5.00	N. W.
April	64	21	41.39	43	29.323	28.538	29.006	.785	.414	0	5.30	S.
May	70	28	48.51	42	29.324	28.664	29.017	.660	3.626	0	6.30	S.
June	86	51	68.07	35	29.241	28.630	28.958	.611	9.242	0	6.00	S. & S. W.
July	84	53	67.64	31	29.324	28.702	29.040	.622	5.461	0	4.30	S.
August	87	48	69.96	39	29.326	28.883	29.096	.443	2.725	0	3.30	S.
September	83	44	60.50	39	29.419	28.625	29.174	.794	5.599	0	3.50	S.
October	72	28	47.90	44	29.505	28.611	29.008	.894	.917	0	4.50	S.
November	63	*-6	34.15	69	29.503	28.286	29.145	1.217	.678	2 $\frac{1}{4}$	4.60	N. W. & S.
December	34	*-16	14.89	50	29.688	28.396	29.100	1.292	1.085	9 $\frac{3}{4}$	6.00	N. W. & S.
Total for year.									33.642	52 $\frac{1}{2}$		
Mean for year.			40.56				29.071				5.14	

*Below zero.

Record of Meteorological Observations made at Minneapolis, Minn., by Wm. Cheney, correspondent of the Smithsonian Institute, Washington, D. C., for the years 1867 to 1872, inclusive.—Continued.

1868.	Thermometer in the open air.				Barometer reduced to freezing point.			Rain and Snow.		Cloudin's. 0 perfect- ly clear; to entire cloudin's	Relative hu- midity in hun- dreds, 100 be- ing complete saturation.	Prevailing winds.	
	Max.	Min.	Mean.	R'ge	Max.	Min.	Mean.	Range.	Am't of rain and snow in inches.				Depth of snow in inches.
Months.													
January	30	*—40	3.85	70	29.660	28.343	29.132	1.317	1.750	19 $\frac{1}{8}$	6.3	.48	N. W. & S.
February	46	*—26	12.72	72	29.723	28.806	29.227	.917	1.500	11 $\frac{1}{8}$	5.3	.50	N. W. & S.
March	67	*—15	32.19	82	29.531	28.833	29.059	1.148	.900	2 $\frac{1}{2}$	5.8	.59	S. & N. W.
April	72	8	38.57	64	29.627	28.120	29.137	1.507	2.014	3 $\frac{1}{2}$	5.3	.51	NWS&SW
May	91	38	59.68	53	29.353	28.726	29.135	.627	4.376	0	4.8	.55	S. & N.
June	96	47	68.01	49	29.500	28.668	29.050	.832	4.230	0	5.1	.69	S.
July	101	63	78.46	38	29.006	28.553	28.814	.453	3.087	0	4.3	.71	S. & S. E.
August	87	48	66.14	39	29.190	28.496	28.889	.694	2.807	0	5.1	.70	S. & S. W.
September	72	25	50.54	47	29.341	28.470	28.921	.871	2.779	0	5.3	.68	W. & N. W.
October	78	19	42.71	59	29.480	28.475	28.957	1.005	4.922	1 $\frac{1}{4}$	5.9	.63	S.
November	59	10	30.48	49	29.428	28.472	28.955	.956	4.128	8 $\frac{1}{4}$	6.8	.72	N. & S.
December	37	*—19	15.20	56	29.568	28.266	29.035	1.302	.550	5 $\frac{1}{2}$	6.2	.58	N. W.
Total for year									33.043	52 $\frac{1}{4}$			
Mean for year			41.64				29.026				5.5		.61

*Below zero.

Record of Meteorological Observations made at Minneapolis, Minn., by Wm. Cheney, correspondent of the Smithsonian Institute, Washington, D. C., for the years 1867 to 1872, inclusive.—Continued.

1869.	Months.	Thermometer in the open air.			Barometer reduced to freezing point.				Rain and Snow.		Clouds.	Relative humidity in hundredths, complete saturation.	Prevailing winds.
		Max.	Min.	Mean.	R'ge	Max.	Min.	Mean.	Range.	Amt of rain and melted snow in inches.	Depth of snow in inches.		
	January.....	39	*—13	17.95	52	29.160	28.370	28.902	.790	.620	6½	4.8	S.
	February.....	42	*—18	17.58	60	29.344	28.426	28.909	.918	2.800	18½	6.1	N. W. & S.
	March.....	54	*—23	20.32	77	29.463	28.454	28.956	1.009	.960	5½	4.5	N. S. & W.
	April.....	69	12	40.53	57	29.260	28.278	28.847	.982	1.311	6	6.1	N. & N. W.
	May.....	90	39	57.63	51	29.124	28.514	28.831	.610	2.520	0	4.7	W.
	June.....	86	47	64.44	39	29.035	28.778	28.885	.257	3.548	0	5.4	N.
	July.....	92	52	68.47	40	29.133	28.249	28.827	.884	2.948	0	5.9	N. W. & S.
	August.....	85	52	68.05	33	29.226	28.463	28.907	.763	9.640	0	6.3	S.
	September.....	86	28	58.90	58	29.224	28.653	28.852	.571	11.448	0	5.9	S. & S. E.
	October.....	73	12	37.29	61	29.304	28.444	28.878	.860	.654	0	5.3	N. W. & N.
	November.....	67	2	27.54	65	29.223	28.414	28.922	.809	.079	5½	7.7	N.
	December.....	40	*—18	18.12	58	29.414	28.536	28.998	.878	.945	9½	7.3	S. & W.
	Total for year.....	.....	.....	.....	.....	.....	.....	.....	.....	38.073	50½	.....	.....
	Mean for year.....	.....	.....	41.53	.....	.....	.....	28.892	.....	.....	.....	5.8	.....

*Below zero.

Record of Meteorological Observations made at Minneapolis, Minn., by Wm. Cheney, correspondent of the Smithsonian Institute, Washington, D. C., for the years 1867 to 1872, inclusive—Continued.

1870. Months.	Thermometer in open air.			Barometer reduced to freezing point.				Rain and Snow.		Cloudin'g. 0 perfect- ly clear; 10 entire cloudin'g's.	Relative humid- ity in 100ths. 100 being com- plete satu- ration.	Prevailing Winds.	
	Max.	Min.	Mean.	Range.	Max.	Min.	Mean.	Range.	Am't of rain and snow in inches.				Depth of snow in inches.
January	32	*—30	9.86	62	29.465	28.190	28.967	1.275	2.000	21½	6.1	.58	S. & N. W.
February	36	*—29	14.88	65	29.453	28.241	28.913	1.212	.557	4½	6.	.61	S. & N.
March	46	*—16	25.23	62	29.410	28.328	28.984	1.082	2.857	25	7.5	.64	N. & E.
April	84	23	49.29	61	29.354	28.436	28.969	.918	1.037	1½	4.6	.56	S.
May	91	44	62.79	47	29.120	28.341	28.846	.779	3.952	0	5.6	.67	S. & S. W.
June	96	49	70.92	47	29.170	28.661	28.961	.509	1.584	0	4.7	.69	S.
July	96	56	72.89	40	29.184	28.693	28.919	.491	3.846	0	4.5	.69	S.
August	90	46	65.50	44	29.224	28.512	28.923	.712	6.020	0	4.6	.71	S. & N.
September	82	50	63.47	32	29.282	28.827	29.053	.455	4.066	0	6.3	.78	N. E.
October	80	20	47.00	60	29.259	28.518	28.949	.741	2.051	0	6.8	.72	S. E. & N. W.
November	63	6	36.83	57	29.397	28.453	28.941	.944	1.760	¾	6.2	.64	S. & N.
December	53	*—21	17.30	74	29.410	28.269	28.967	1.141	.600	6	5.2	.71	N. W.
Total for year.	.....	.....	.....	.....	.....	.....	.....	.....	30.330	59¾	.....	.....	.....
Mean for year.	.....	.....	44.79	.....	.....	.....	28.949	.....	.....	.....	5.7	.66	.....

*Below zero.

Record of Meteorological Observations made at Minneapolis, Minn., by Wm. Cheney, correspondent of the Smithsonian Institute, Washington, D. C., for the years 1867 to 1872, inclusive.—Continued.

1871.	Months.	Thermometer in the open air.			Barometer reduced to freezing point.			Rain and Snow.		Cloudin's.	Relative humidity in hundredths, complete saturation.	Prevailing winds.
		Max.	Min.	Mean.	Max.	Min.	Mean.	Range.	Am't of rain and snow melted in inches.	Depth of snow in inches.		
	January.....	39	*—23	11.29	29.570	28.341	29.051	1.229	1.625	16½	.76	N.W.&S.E.
	February.....	44	*—24	17.90	29.464	28.218	28.889	1.246	.275	2½	.77	S.
	March.....	51	3	30.14	29.272	28.024	28.853	1.248	2.776	12¾	.76	N. E.
	April.....	76	25	45.47	29.116	28.024	28.704	1.092	4.997	7	.67	N.E.&S.E.
	May.....	91	38	63.03	29.222	28.669	28.949	.553	3.116	0	.56	N.E.&S.E.
	June.....	91	50	67.87	29.099	28.564	28.876	.535	3.107	0	.63	S.E.&N.E.
	July.....	93	53	70.00	29.203	28.601	28.898	.602	1.927	0	.68	N.E.&S.E.
	August.....	92	45	67.86	29.178	28.456	28.872	.722	5.396	0	.72	S. E.
	September.....	88	30	57.44	29.400	28.604	29.066	.796	2.246	0	.70	N.E.&S.E.
	October.....	80	20	45.83	29.451	28.525	28.913	.926	2.341	0	.70	S. & N. E.
	November.....	53	*—16	25.07	29.395	28.592	29.019	.803	1.973	6	.75	S.E.&N.E.
	December.....	41	*—29	5.79	29.427	28.394	29.014	1.033	1.125	11½	.68	S.E.&N.W
	Total for year.....	.....	.....	.....	.....	.....	.....	.....	30.904	56	.....	.....
	Mean for year.....	.....	.....	42.30	.....	.....	28.925	.....	.....	.....	.69	.....

*Below zero.

Record of Meteorological Observations made at Minneapolis, Minn., by Wm. Cheney, correspondent of the Smithsonian Institute, Washington, D. C., for the years 1867 to 1872 inclusive—Continued.

187..	Thermometer in open air.				Barometer reduced to freezing point.			Rain and Snow.		Clouds. 0 perfectly clear; 10 entire clouds.	Relative humidity in 100 being comparative.	Prevailing Winds.
	Max.	Min.	Mean.	R'ge	Max.	Min.	Mean.	Range.	Amt of rain and snow in inches.			
Months.												
January	40	*—24	11.64	64	29.436	28.593	29.009	.843	.300	3	6.1	S E & N W
February	47	*—21	17.38	68	29.326	28.166	28.897	1.160	.450	4	5.1	S. E.
March	45	*—18	19.65	63	29.583	28.385	28.994	1.198	2.000	21 3/4	5.3	N.
April	83	14	44.12	69	29.334	28.227	28.819	1.107	1.763	3	6.6	S. & S. E.
May	86	34	55.98	52	29.245	28.484	28.884	.761	4.931	0	6.8	S E & N E
June	94	54	68.75	40	29.259	28.573	28.860	.686	3.465	0	6.3	S. E.
July	94	54	71.47	40	29.108	28.616	28.901	.492	5.223	0	4.5	S E & N E
August	91	49	69.50	42	29.140	28.621	28.964	.519	3.057	0	4.5	S E & N E
September	92	33	57.84	59	29.146	28.432	28.865	.764	3.080	0	5.6	N E & S E
October	76	23	45.59	53	29.299	28.389	28.961	.910	.447	0	3.9	S. & S. E.
November	53	*—22	22.90	75	29.536	28.446	28.932	1.090	1.593	13 3/4	7.1	N. & N. W.
December	38	*—38	2.76	76	29.481	28.340	29.112	1.141	.637	6 3/4	5.2	N. & S. E.
Total for year									26.946	51 1/2		
Mean for year			40.67				28.933				5.6	

*Below zero.

APPENDIX.

WINTER MEETING OF FRUIT GROWERS' ASSOCIATION.

ST. PAUL, January 10, 1867.

A special meeting of the Fruit Growers' Association was held at the Court House. The meeting was called to order by the President, who briefly stated its object. After choosing Mr. H. J. Brainard, Secretary, Colonel Robertson read the following paper on fruit growing at the extreme north, Russia, &c., prepared by previous request of the Association:

The object of the Minnesota Fruit Growers' Association is to promote in Minnesota the profitable cultivation of valuable fruits, varieties of which have already become naturalized to the more southern latitudes of our country.

The importance of this enterprise is made apparent by the fact that more fruit is consumed by the American people than by the inhabitants of any other temperate climate. The consumption and demand increase faster than the supply. The popular taste is rapidly improving. The fondness for fruit growing is becoming a characteristic of our people, who are not content to make a permanent home where the choice fruits of the North cannot be grown.

The attempts hitherto made in our State to raise apples, pears and plums have, we must acknowledge, resulted in almost universal failure. Few trees of these fruits have survived the third year after planting—probably not more than one in three hundred—perhaps not more than one in five hundred. Mr. Stewart's success in raising seedling apple trees may be taken as an average, one tree in ten thousand of his seedlings survived to maturity.

It is not surprising, therefore, that an opinion generally prevails, that Minnesota is too far North for the successful cultivation of apples, pears, cherries and improved varieties of plums.

It is consequently of the first importance that we should ascertain whether or not, we are within the zone or limits to which the cultivation of these fruits is confined.

That we are in the zone of the fruits named, facts, I think demonstrate. Our failures have been doubtless owing to want of experience in cultivation, to want of proper adaptation, and to lack of knowledge in selecting varieties.

The essential conditions of temperature to insure success, is a sufficiency of heat in the growing season to ripen the fruit and of subsequent cold to force hibernation—or compel the tree to stop growing without killing it. Our summer heat is sufficient; our winter cold too intense, for most of the varieties we have tried.

I venture the proposition that in any climate where the summer heat is suf-

ficient to ripen the fruit of any given kind, that there are varieties of trees of such fruit, or new varieties may be originated, which will withstand the winters and seasonal extremes of temperature in such climate.

The fruits named have been carried by civilized man in his migrations from milder climates northward. The change in the constitution of the tree has been gradual. Naturalization from mild to much colder regions has been accomplished by the production of new varieties, the essential characteristics of which have been earlier ripening of the fruit, and greater hardiness of the tree to enable it to endure severer cold or greater differences of seasonal temperatures.

It is a mistake to suppose that trees adapted to a southern climate and requiring a long growing season, can ever be acclimated to one much shorter.

As a general rule applicable to our continent, every additional degree northward shortens the growing season about four days. Our season at St. Paul is therefore twenty days shorter than that of Philadelphia.

Varieties of fruit which ripen at Philadelphia must fail here in consequence of our shorter growing season.

But length of growing season is not the only condition—every variety of vegetation requires for its maturity of leaf or fruit a certain sum of heat. Wheat, for example, requires, according to the observations of Boussingault, from 2,000 to 2,200 degrees of heat, centigrade, which, with a mean temperature of 20 degrees centigrade, would require from 100 to 110 days to ripen.

Every variety of fruit requires for ripening, a certain sum of heat, but in ascertaining the requisite quantity for plants growing exposed to the sun, the thermometer consulted should also be exposed to its rays. This is the approved method of observation, which, when applied in our climate, will, I think, give results highly favorable—showing that the solar heat of our growing season is sufficient to mature all early varieties, not only of the fruits named, but of peaches, also.

Our mean Summer temperature is greater than that of Paris, in the vicinity of which all the fruits named are cultivated with great success. The obstacle to our success in fruit growing, thus far, is our Russian winter climate.

The fruits I have named are cultivated with success in Russia. Pallas, who visited Moscow, near the close of the last century, states that these fruits were then cultivated in that vicinity, "and sold at reasonable prices."

Mentelle & Maltebrun, in their great work published in Paris, in 1803, give an account of the fruits cultivated in Russia, embracing apples, pears, cherries and plums. A variety of apples, grown at Kervsk, they describe as weighing four pounds, of a delicious flavor, and keeping a long time. Another variety of apples grown in the vicinity of Moscow, which was brought from China, they describe as so transparent that when held up to the light, one can count the seeds in it. They state that in several of the districts of Russia, the exportation of fruits, and especially of apples, is an extensive branch of commerce—that the exportation of apples from the towns of Kalouga and Simbrisk, amount to from 18,000 to 20,000 roubles annually; and that in some parts of Russia, the cultivation of the cherry for the manufacture of *Kirschwasser*, is carried on very extensively.

On the Volga and on the steppes of the Caspian, all the fruits I have named, including varieties of the peach, are profitably cultivated.

Xavier Hommaire de Hell, in his travels over the steppes of the Caspian, in 1838, describes a splendid fruit garden, owned by a Russian noble, at Clereofka, where he says "all kinds of fruits are collected here together. We counted more than fifty varieties of pears in one alley."

Adolph Erman in his travels through Russia and Siberia in 1840, mentions with surprise that he found at Torxhok, on the road from Moscow to Saint Petersburg, north of latitude 57 deg., and at Vladimir, north of 56 deg., that "cherries of a superior kind" were extensively grown and sold at a very low price.

There are also extensive orchards of apples at Vladimir, which is famed in Russia as a fruit region.

There are other Continental or interior localities much further south of the places named, where from climatic conditions, the Winters are intensely cold, and the Summers dry and hot from which we may procure varieties of fruit trees adapted to our climate. Of these I may mention Astrachan, and Russian Armenia, in which Erivan is the most celebrated for its numerous and extensive orchards and vineyards. The Summers are hot, and I judge much like our own, but the Winters so cold that it is necessary to cover the grape vines with earth to preserve them. My information on this subject is derived from the voluminous work of Montpereux, who visited that region in 1838. He states that there are there 1,470 gardens planted in vines, apple and pear trees, the sale of the fruit of which constitutes the principal revenue of the place. The same author mentions other places in the Caucasus mountain range between the Black Sea and the Caspian, where the fruits named are extensively cultivated, and where some varieties of wild grapes are equal to the cultivated varieties of France.

In Dr. Clark's Travels in Norway and Sweden, published in 1838, there is frequent reference to the excellent apples, pears and cherries found by the author growing in those countries.

He was much surprised and delighted with the horticultural improvements at Trondhjem in Norway, 63 deg. 25 min. north. He says, speaking of the town: "The houses are handsome, regular, large and airy, with pleasant gardens full of fruit and flowers, worthy of note in such a northern latitude, apples, pears, plums, cherries, strawberries," &c.

Surely these facts ought to encourage us to persevere in our efforts to obtain varieties of standard fruits adapted to our climate.

We must, I think, for entire success in our day and generation, procure by some means, for naturalization in Minnesota, varieties which thrive in the cold countries referred to, and especially from the continental or interior parts of Russia and Northern China, where the climate is like ours, not only intensely cold in Winter, but also dry, as compared with maritime or lake coasts, and hot in Summer; and the growing seasons of which are short like ours.

Apples are successfully cultivated in climates where the Winters are far more severe than ours. Sir George Simpson, the late Governor of Hudson Bay Territories, gives in his Voyage Round the World, an account of his visit to Burnaul, in Siberia, which is north of the Little Altai mountains and of Northern China. He states as a fact that apples are cultivated there.

I have seen it stated that the Duchess of Oldenburg is of Siberian origin, from which country it was introduced into Russia. We have already ascertained that the Russians trace the origin of some of the varieties of apples they cultivate to China; and some of the travelers from whom I have quoted, state that the variety of apples they saw in Russia, are unknown to other parts of Europe.

The Russians have maintained for more than one hundred and fifty years overland commercial intercourse with Northern China, which extends to the 50th parallel, and as the Chinese are the most skillful horticulturalists in Asia, and probably the most ancient in the world, we may reasonably conjecture that many varieties of fruits growing in Russia were derived from Northern China, a portion of the globe about which very little is known, but which I have no doubt affords a magnificent field for horticultural exploration.

I have been able to find but one author, Pere Du Halde, who gives an account of Northern China. Du Halde says the same kinds of fruits are raised there as in Europe, and particularly mentions apples and pears. This is in Manchooria, from which came the present ruling race of China, a race of very ancient civilization. The climate of Manchooria, is as hyperborean as that of Minnesota, and we may reasonably seek in that country for valuable varieties of fruits that could be successfully naturalized to our soil. I think that our experience thus far shows that, as a general rule, the varieties of fruits best adapted to our climate must be obtained from the interior of continents where the climate is similar to our own.

We have been disappointed in our efforts to naturalize apple trees which grow in the Canadas even north of Quebec, and in Maine.

There has been, it is true, some success in varieties from those regions, but in fact, general failure. Success with them depends upon highly favorable circumstances, and the best methods of culture and protection.

For general success we need other varieties, which, like the Duchess of Oldenburg, are as hardy as our native forest trees.

We cannot be content to await the production of valuable new varieties, which may not be possible in a life time.

Our naturalized Duchess of Oldenburg is a fall apple, lasting but a short time. What an acquisition would we have in the Russian four-pounder, grown at Kirvesk, which is a winter apple, a great keeper and of superior quality. Its introduction would be worth millions to our Russian north.

Thomas Jefferson said that the person who introduced the Catawba grape conferred a greater benefit upon the country than if he had paid off the then national debt, which was considered vast.

How shall we estimate the value of the benefaction bestowed upon our people by the enterprising pioneers who shall succeed in introducing into general cultivation in Minnesota, varieties of valuable standard fruits, such as apples, pears, cherries and plums, which may be profitably grown for exportation as well as for home consumption. This is surely an object of great public importance. I believe that, however, improbable it may appear, its accomplishment is possible, in our day and generation.

Is there not to be found somewhere in the North, at least one lover of horticulture, who has the necessary knowledge and the will to go and collect from the countries referred to, varieties of fruit trees for adoption here, and who has also what is essential—money enough to pay his way? Such a man

who will thus devote himself to the public good, will confer incalculable benefits on our State, and entitle himself to the rank of a public benefactor.

At the conclusion of the address an opportunity was offered for those who were willing, to state their experience in regard to fruit growing, or any fact that had come under their observation bearing upon the subject. We have not space or time to give even brief abstracts of what was said. Statements were made by Messrs. L. M. Ford, Wheaton of Northfield, Smith of Freeborn, Mitchell, of Goodhue, Nichols of Ohnsted, Governor Marshall and other gentlemen. The subject is not only an important but an exceedingly interesting one, and we are glad to see so much interest manifested.

A resolution was passed to hold a meeting every Thursday evening during the session of the Legislature.

Also, that the subject of conversation for the next evening should be the winter protection of fruit trees, grape vines and plants.

The meeting adjourned at a late hour.

THE CLIMATOLOGY OF FRUIT CULTURE.

From the St. Paul Daily Press of January 11, 1867.

In our report of the proceedings of the Fruit Growers' meeting, held last evening at the Court House, will be found an admirable paper, prepared by Col. D. A. Robertson, embracing in brief some of the results of the laborious researches of that gentleman, in what may be called the climatology of fruit culture, as applicable to the naturalization of apples, pears, cherries, and other staple fruits of the temperate zone in this climate. As a matter of fact, it has been ascertained by costly experiment, that most varieties of fruit trees will not survive the winter climate of Minnesota, while some few of northern origin, such as the Duchess of Oldenburg, successfully resist the rigors of our winters. It is also a matter of fact, that in climates whose winters are as cold as ours, apples, &c., thrive well, but the experiment of introducing these hardy varieties from Lower Canada, northern Vermont or Maine, has also generally proved a failure.

But these failures have not disheartened Col. Robertson, who has an abiding faith that the apple may, in time, be educated to our climate, and that, in the meantime, there are many existing varieties, besides those already introduced, which are entirely adapted to our climate.

He assumes that these varieties may be found in analagous climates. This principle has been generally recognized by intelligent horticulturists, their only error being in regarding those climates as analagous where the winter temperatures, or, still more loosely, where lines of latitude correspond. But atmospheric moisture is almost as important an element of climate as temperature, and this principle of climatology has been very generally overlooked by our fruit growers. Guyot divides climates generally into two classes, the maritime or oceanic, which cover the seaward slopes of continents with the humid atmosphere of the sea, and the interior or continental climates, where a dry atmosphere prevails, such as reigns over the interior plains of Asia and America.

Now, the climate of Minnesota is a blending of these two in Summer: while in Winter the arid interior atmosphere generally prevails. It is in a corresponding geographical situation in the Eastern Hemisphere, that we must seek for the climatic parallel of Minnesota, both as to heat and moisture. We long ago pointed out the striking coincidence both of temperatures and rain measures between the climate of Minnesota and Central Russia, and it is here that Col. Robertson is led by his researches in natural history to look for the apples, pears, plums and cherries which are suited to the peculiar conditions of our Minnesota climate. The subject is one of such great importance as will justify practical investigation. For our own part, we do not in the least doubt that Col. Robertson has got upon the right track, and that not in Illinois nor even in Northern New York, nor in Lower Canada, but in the interior of Russia and Siberia are to be found the nurseries which will supply our fruit growers with the future orchards of Minnesota.

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